

MANUFACTURERS' RECORD

A WEEKLY REVIEW OF THE IRON, STEEL, METAL & HARDWARE TRADES.

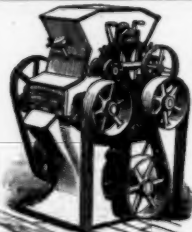
AND A MANUFACTURING AND TEXTILE PAPER, DEVOTED TO THE UPBUILDING OF SOUTHERN MANUFACTURES AND THE DEVELOPMENT OF THE MATERIAL RESOURCES OF THE SOUTH.

VOL. 8. No. 1.
WEEKLY.

BALTIMORE, AUGUST 15, 1885.

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CARD CLOTHING Works, 413 to 421 Race St., Cor. of Crown. **Manufacturers' & Mill Supplies**
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Flour Mill Machinery.

We make Rolls or Portable Mills for making New Process Corn Meal.
Complete outfits on any system Rolls or Stones for Wheat Grinding.

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MORSE, WILLIAMS & CO. Successors to CLEM & MORSE
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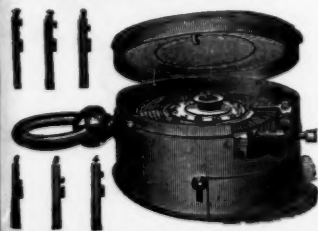
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—IMPORTANT FOR ALL LARGE CORPORATIONS AND MANUFACTURING CONCERNS.—

Capable of controlling with the utmost accuracy the motion of a watchman or patrolman as the same reaches different stations of his beat. The instrument is complete in itself, portable, and as reliable as the best lever watch. It requires no fixture or wires communicating from room to room, as is the case with ordinary watch clocks.

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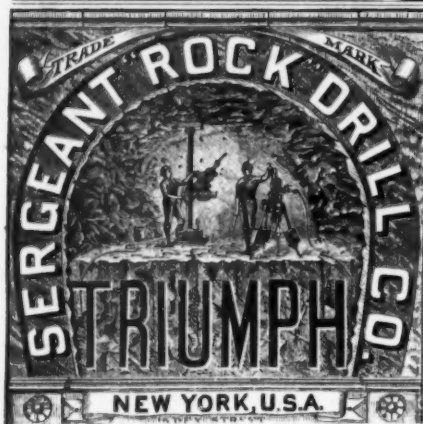
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Made PERFECTLY Straight and any Length without Joints.

For Main Driving it is the Best. Much Cheaper Than Leather.

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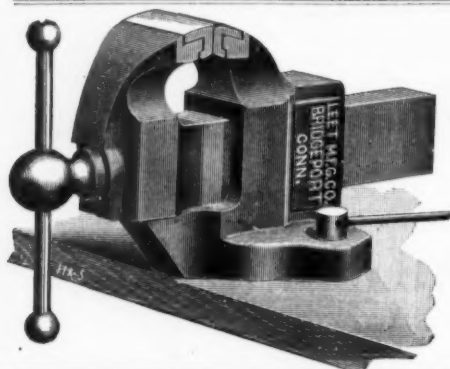
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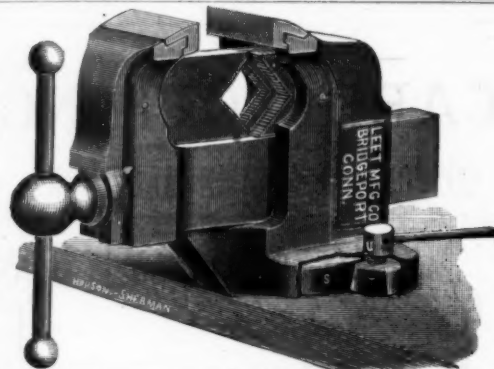


THE LEET M'FG CO.'S Patent Sliding Jaw Bench Vises.

WITH SWIVEL BOTTOM.

These Vises can be used either as a Sliding Jaw or a common Screw Vise by simply turning in or out the small screw in backside of the head or base. It will hold work with a more powerful grip than any other Vise. The screw will never work loose when either chipping or filing. The workmanship is perfect; all the working parts are made of steel and interchangeable. Sold by all Hardware Dealers. Send for Descriptive Circular and Price List to

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Wiswell Ore Pulverizer and Amalgamator Combined.

The cost of this Mill is much less than any other machine of sufficient capacity to do the same amount of work.

It requires less power to run it, (10-horse being sufficient.)

The wear and tear of the Mill is much less than any other Quartz Mill doing the same amount of work, and the quality of the work done by it is greatly superior to work done in any other Quartz Mill now in use.

It crushes to a uniform fineness and makes no slimes, so that no sizing is required for concentration.

The Mill is equally well adapted to crushing and pulverizing of all classes of ores, either for amalgamation or concentration, and will pulverize and amalgamate from one-half to one ton per hour, according to character of ore and fineness of screens.

With ordinary care there is no loss of mercury by flouring, and consequent loss of gold, as in most other Mills where mercury is used in the Mill.

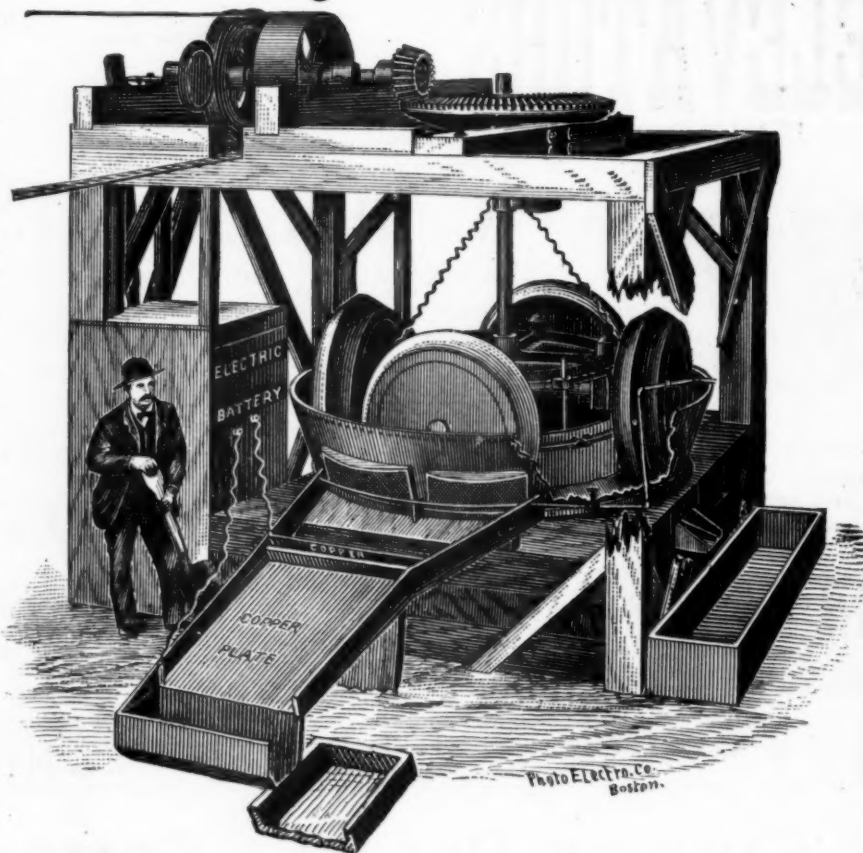
Amalgamation is carried on in the same operation with the crushing. The mercury is placed in the Mill in quantities varying from 10 to 40 pounds.

The application of electricity to the Mill for the purpose of cleaning and keeping the mercury alive has been to a very large extent superseded by the invention and introduction of the Mercury Trap in the Mill for the purpose of drawing off the mercury when charged with gold or on the slightest indication of flouring. By this ingenious device the mercury can be changed as often as desired without loss of time in either crushing or amalgamating. By opening this Trap the amalgam is discharged from the Mill in three minutes, and clean mercury introduced in its place.

To those familiar with running a Gold Mill this latter advantage will be greatly appreciated; in fact, it gives the mill-man full control of his work.

This Mill has been on exhibition at the foundry of Messrs. Bisbee & Endicott, at Chelsea, Mass., for the past 18 months, a good part of the time in active operation, and we have treated the most rebellious ores from many mining districts with most satisfactory results to the parties concerned.

The past year we have sold many Mills, which may be found in Michigan, North Carolina, Dakota, Montana, Idaho, Colorado, California, Mexico, Nova Scotia, etc. All those in operation are giving the most perfect satisfaction, as testimony will prove, and we will take pleasure in referring to any one of these on application.



We Furnish a Complete Mill for \$2,500, Delivered on Board Cars.

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Cylinders, 36x36 and 36x30, with 20 tops and Self-Strippers and Railway Troughs. Union Cards, with workers, strippers and tops.

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English Slubbers and Fly Frames, With Long or Short Bolsters.

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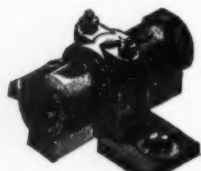
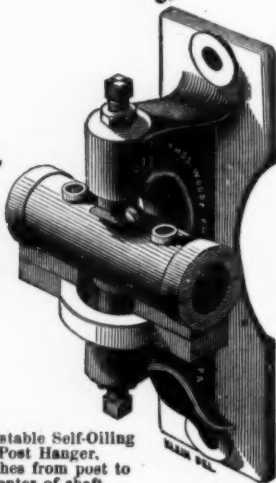
Send for Pamphlet. Send for Price-List.

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Application.

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ADJUSTABLE SELF-OILING HANGER.

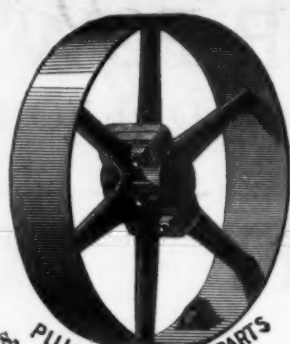
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Self-Oiling Pillow Block.DOUBLE-BRACED
ADJUSTABLE SELF OILING HANGER.Adjustable Self-Oiling
Post Hanger,
6 inches from post to
center of shaft.

FAIRMOUNT MACHINE WORKS.
Office, 2106 Wood St., Philadelphia.
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Manufacture as Specialties

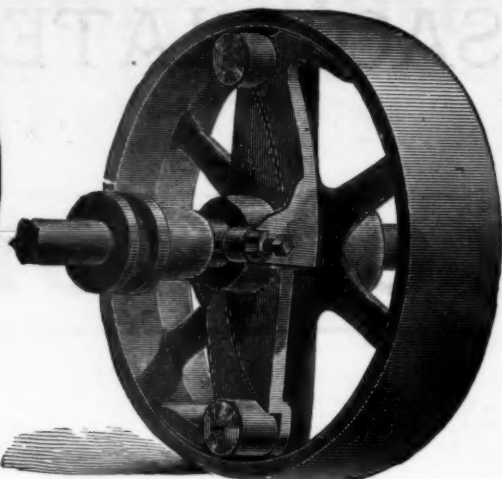
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Winding Machines, Plain and Presser
Reaming Machines, Planing, Reeling,
or Spooling Machines, Sizing,
Scouring, Furling and Cal-
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WARPING MILLS,
16, 18 and 20 yards Circumference,
WITH IMPROVED HECKS,
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With Patent
ADJUSTABLE SELF-OILING HANGERS,
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Also WALL, POST AND GIRDER HANGERS.
Pulleys, from 4 inches to 10 feet in diameter.
PATENT FRICTION PULLEY.
Pulleys in two parts, any size required.
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Oil Presses for Lard, Fish and Paraffine.



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**PATENT FRICTION PULLEY.**

Simple, reliable and very durable.
Suitable for any kind of driving, they
serve equally well as driver or driven.

Special Driving,
such as Angular, Muley, and Gallows Driving,
furnished for any position
where possible to transmit power by belts.
PULLERS from 4 inches to 10 feet in diameter.

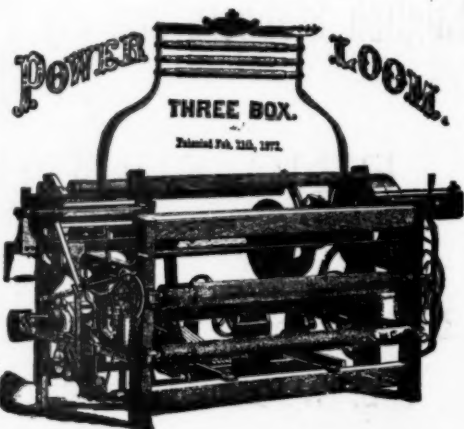
Why use old style Bearings, that require oiling
every day, when you can get Bearings at less cost
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thus save oil and labor enough to pay for the bear-
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Only Gas Machine

that makes

UNIFORM**GAS.**

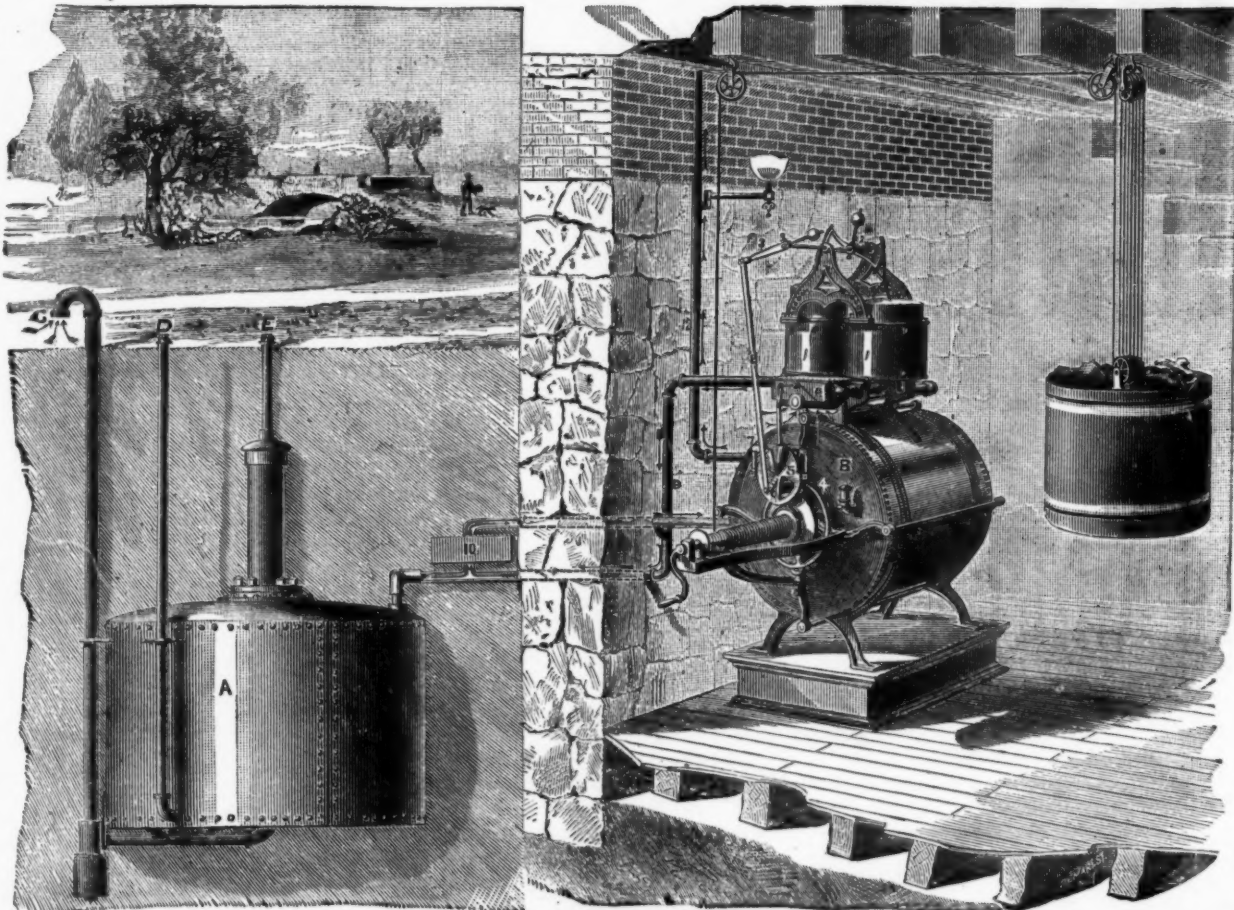
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No Smell.

Plain Bat Wing

Burners only

Required.**GAS ALWAYS****Perfect.**

Less than \$1.
Per Thousand
Feet.

Machines of any
CAPACITY.

Read Circulars
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Simple,
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**Absolutely
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Wool, Worsted and Flax Machinery and English Card Clothing. Hardened and Tempered Steel Wire a Specialty.
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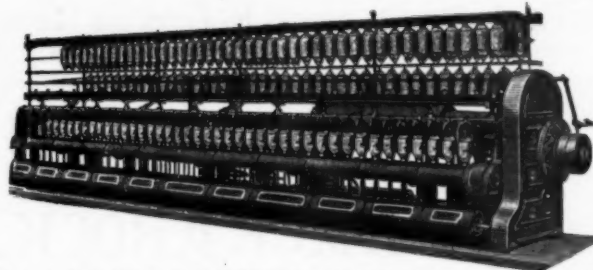
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62,000 INTERMEDIATE ROVING SPINDLES.

The quality of Sliver produced by our Frames surpasses all others, and Waste, Single and Roller Laps are prevented, and production increased.

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SLUBBING AND ROVING FRAMES WITH LATEST AND BEST IMPROVEMENTS.



SPECIALTIES:
EXHAUST OPENERS, LAPPERS, (LORD'S EVENERS,) IMPROVED ROLLER CARDS, PRODUCE MORE AND MAKE LESS WASTE THAN ANY OTHER.

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Already working with latest improvements.

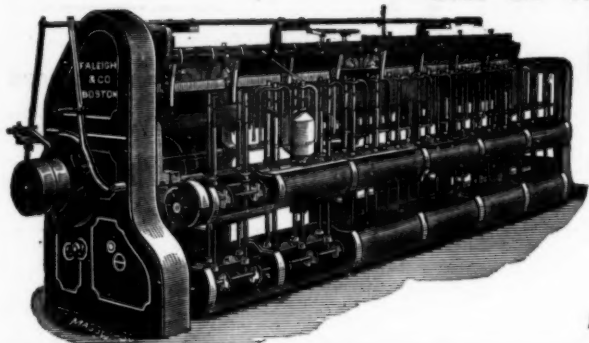
800 CYLINDER SLASHERS
Now at work in America alone

Patent and plain Spindle, Spinning and Twisting Frames, Spoilers, Reels and Circular Warpings, Cloth Folders, Size Kettles plain and Fancy Looms, Spindles, Flyers and Fluted Rolls.

F. A. LEIGH & CO.

Importers of Mill Machinery,

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Openers, * Lappers, * Cards, * Drawing,
Slubbing and Roving Frames,
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WITH WHICH THIS PAPER IS PRINTED
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THE INK QUEEN CITY PRINTING INK CO.
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MANUFACTURERS OF ALL DESCRIPTIONS OF

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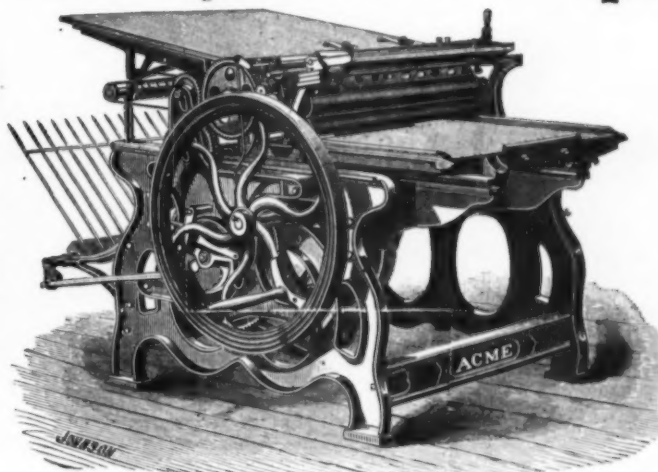
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FOR NEWSPAPER OR JOB WORK.

FOR STEAM OR HAND POWER.

These Presses combine, in a thoroughly perfected machine, many features whose value will be readily appreciated, including several which have never been practically developed by any Cylinder Press. Among these features are: Compact and firm in all its adjustments; the most perfect two roller ink distribution; speed combined with perfect registration; slow movement of the bed during the impression, and quick return; suspending the impression; suspends the grippers, guides and ink; ink can be distributed without inking form; unlimited rolling of the form; composition rollers interchangeable; feeder can suspend action of the ink fountain; impression adjustable while the Press is in operation; whole form accessible for correction on the Press; quiet operation without jar; great saving in wear of type; convenient height of bed.

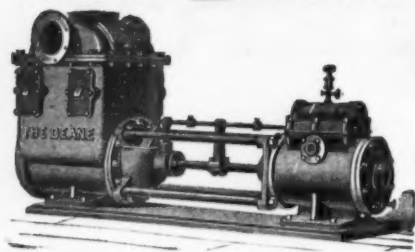
The present hand-power Acme Presses fully equal, in capacity for fine work, the first-class two-roller Presses of other kinds, and they run much easier, and are also capable of higher speed by steam than any other Cylinder Press manufactured for country offices or for hand operation. The convenience of changing from newspaper to poster and job work is unequalled.

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Circulars, with sizes and prices, will be sent on application.

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64 Federal Street, Boston, Mass.

THE DEANE STEAM PUMP CO., HOLYOKE, MASS.



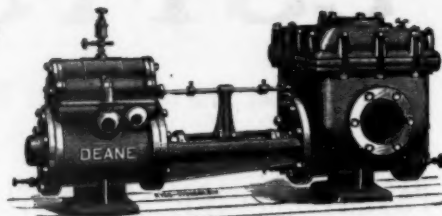
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IRRIGATION PUMPS ARE SPECIALTIES.

Water Works Pumping Engines for Cities and Towns.

SEND FOR NEW ILLUSTRATED CATALOGUE No. 22.



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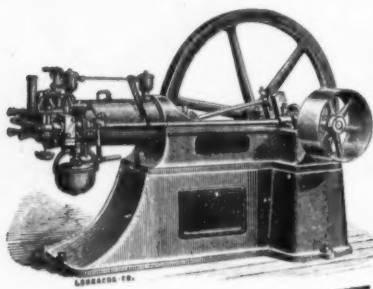
MANUFACTURER OF THE INGREDIENTS
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IT CONTAINS NEITHER GLYCERINE NOR
NITRO-GLYCERINE IN ANY FORM.

It Does Not Freeze. Can be shipped by express, railway or steamship lines. Neither of the two ingredients are explosive until combined, and when combined are safer than Dynamite. This explosive approximates Nitro-Glycerine in strength. Send for circulars to

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Over 14,000 in Use.

Otto Gas Engine

20 to 70 per ct. less Gas
consumption than
ANY other ENGINE.

Working Without Boiler, Steam, Coal, Ashes or Attendance.

Started instantly by a Match, it gives full power immediately. When stopped, all expense ceases.

No explosions, no fires nor cinders, no gauges, no pumps, no engineer or other attendant while running. Recommended by Insurance companies. UNSURPASSED IN EVERY RESPECT for hoisting in warehouses, printing, ventilating, running small shops, &c. Sizes: 1 to 25-horse power.

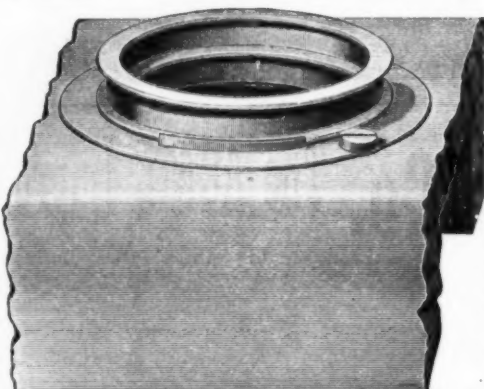
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DOUBLE ADJUSTABLE Spinning Rings.

GEORGE DRAPER & SONS,
HOPEDALE, MASS.

TELEGRAPH ADDRESS AND RAILROAD STATION,
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	Number of Rings sold.	Number of Rings sold for repairs.
1869.....	6,025	
1870.....	20,258	
1871.....	38,648	
1872.....	94,564	12
1873.....	117,301	
1874.....	168,382	500
1875.....	223,224	963
1876.....	185,319	947
1877.....	270,811	946
1878.....	215,214	3,309
1879.....	336,918	8,007
1880.....	567,860	11,264
1881.....	659,730	8,974
1882.....	636,715	22,515
1883.....	416,500	21,689
1884.....	319,869	25,105
1885, 5 mos.	112,522	12,118
Total number sold in 16 years.....	4,390,260	116,349
Total number in use 4,273,911.		

The great durability of our Rings is shown by the fact that we have more rings in use over twelve years old than all we have sold for repairs.

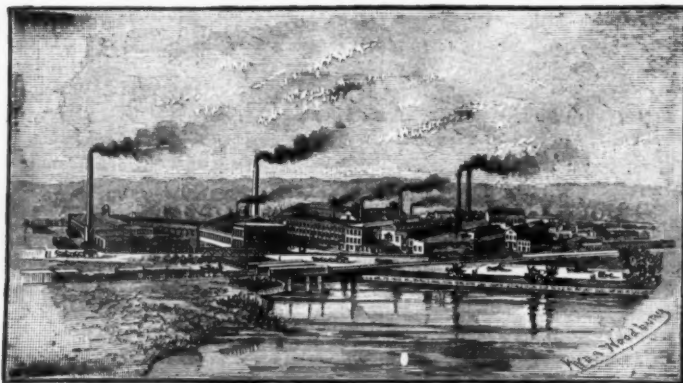
This statement shows unmistakably that a mill once supplied with our rings need think but little of the cost of repairs. As the number sold for repairs is an average of about twenty per cent. of the number sold the tenth year before, the average life of our rings will be at least twelve years.

Do not make the mistake of ordering new frames without specifying Double and Adjustable Rings. While they cost more to begin with, they are much the cheapest in the end, on account of their uniform excellent quality and unparalleled durability.

As an encouragement to use none but the best of Rings, we have decided to reduce the price on and after the first day of January, 1885, of those 1 1/2 inches or less in diameter, without holders and screws, to be used only to take the place of our rings worn out, to 12 cents each.

Washburn & Moen Manufacturing Co., Worcester, Mass.

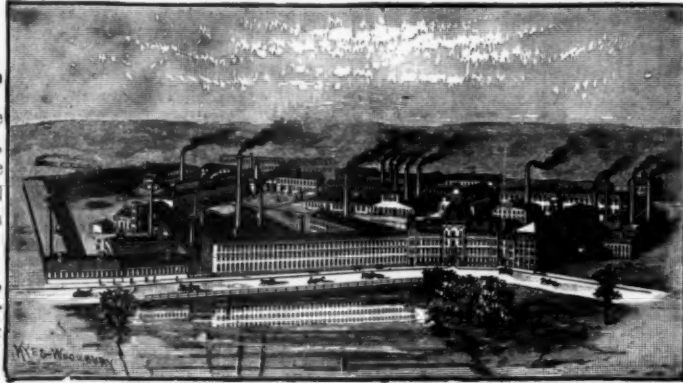
Wire Drawers, and Manufacturers of Iron and Steel Wire of Every Description.



Iron and Steel Telegraph
and Telephone Wire.

Patent Steel Wire Bale
Ties, Pump Chains,
Chain Wire, Steel Wire
for Springs, Needles and
Drills, Watch Main
Springs.

Send for Price-Lists,
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GLIDDEN PATENT STEEL BARB WIRE.

The Best Fence Material in Use.
For Sale by Special Agents and Hardware

Proof against Fire, Wind and Flood.
Dealers in all Parts of the United States.

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Chicago, Illinois.

BALTIMORE Manufacturers' Record.

Published Every Saturday by
BIGSBY & EDMONDS.

E. H. Edmonds. J. W. Egsby. Wm. H. Edmonds.

R. H. EDMONDS, EDITOR.

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SOUTHERN OFFICE, ATLANTA, GA.

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Advertising Agent for New York and Vicinity.
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One square (14 lines Agate, 1 inch) 1 time.....\$ 1.50
" " " " " 4 " " " " " 5.00
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For advertising on outside pages add 50 per cent. to
the above rates.
Reading Notices 50 cents per line each insertion.

BALTIMORE, AUGUST 15, 1885.

A Successful Furnace.

The Low Moor furnace of Virginia, has an excellent reputation, both for the quantity and quality of its output. Some months ago we gave a statement of the materials used and the production of iron at this furnace during the first three months of the year. The Virginians in its last issue gives the production of iron at Low Moor for the first six months of the year as follows:

THE FURNACE OPERATIONS OF SIX MONTHS:	
Limonite iron ore used.....	51,941
Coke, from New River coal, used.....	27,769
Limestone, No. VI, used.....	25,639
Raw materials used.....	105,349
No. 1 pig iron made.....	9,130
No. 2 pig iron made.....	8,710
"Mill" pig iron made.....	3,557
"Silvery" pig iron made.....	1,424
"Mottled" pig iron made.....	373
Tons of pig iron made.....	23,184

The time lost by stoppages was only about 2½ days, a remarkably small loss for six months. The average daily yield for the 185 days was 125.3 tons of pig iron per day. The best day's run was 143 tons.

The average consumption of raw materials per ton of pig made was:

Tons.	
Iron ore, about.....	2.19
Coke, about.....	1.19
Limestone, about.....	1.11

These results compare well in every particular with the best blast furnace returns of this country, as published by our cotemporaries; few of them show as low a consumption of raw materials to the ton of product, especially in coke, and but few as small a consumption of common brown hematite iron ore. But few furnaces show such large percentages of the higher grades of pig iron in their total product as does Low Moor.

MESSRS. B. F. JOHNSON & Co., have become business managers of the Industrial South, Richmond, Va., and this most excellent paper will be more vigorously pushed than ever.

Brilliant Crop Prospects in the South.

Only once in the last 10 years, and that in 1880, have the August reports as to the condition of the cotton crop been better than at present. The acreage in that year was less than the acreage of this year by over 2,000,000 acres, possibly 2,500,000 acres. While the present condition of the cotton crop has, as already said, been surpassed once only in the last 10 years, we doubt if there was ever before a season in which the average condition of the cotton, corn, rice, tobacco, sugar and fruit crops was as high as at present. It is, indeed, a marvellous tale of wonderful crops that comes up from the whole South. From one end of the South to the other there are songs of praise for the magnificent crops now almost absolutely assured. We do not remember to have ever seen the Southern press and the Southern people so jubilant—a milder word will hardly express it—over the improved outlook of their whole section and every business interest than at present. Not only will the cotton crop in all probability greatly exceed the largest crop ever before produced, but the corn crop will also be the biggest ever raised, and will probably be very nearly equal to the entire consumptive wants of the South in that direction; while tobacco also follows in the same good line of the biggest crop on record, with fruits doing the same, and sugar and rice not falling far behind.

Moreover, it is the universal testimony of all authorities that these crops have been produced at a lower cost than ever before.

The United States Agricultural Department, under date of August 10, says the returns to the department "make a slight improvement of the condition of cotton on the 1st of August, the general average being 96½, a point only once exceeded in the August returns of 10 years—in 1880. The average in August, 1882, was 94, and only South Carolina and Alabama exceeded their present figures." The crop of 1882, which in August stood at 94, was 6,949,756 bales on 16,276,000 acres. This year the acreage is 2,000,000 acres or more greater than in 1882, and the condition of the crop at present is better than at the corresponding time of that year. The National Cotton Exchange, in its August report, makes the condition of the crop 97—a fraction higher than the Agricultural Department; while the Agricultural Departments of the various States make equally as satisfactory returns, South Carolina's commissioner, for instance, saying:

"The favorable condition of the cotton crop during June has been fully maintained in July, and the reports indicate one of the finest crops grown in the State for many years. * * * The average condition for the State is reported at 99. This condition is higher than any reported by the National Department of Agriculture since 1870, when it was 101. The corn crop is unusually

good, and it will doubtless be the largest yield ever obtained in the State. The condition is 102, against 87 for the same time last year."

Of the corn crop in West Tennessee, North Mississippi, North Arkansas and North Alabama, Hill, Fontaine & Co., say:

"As a rule the yield of this cereal will be more than ample to supply all home wants, and in many sections will be raised the finest crop ever known in the history of the past ten years."

In Louisiana the report of the Commissioner of Agriculture shows the condition of the crops, almost without a single exception, to be the best ever produced in that State:

	Acreage.	Condition.
Cotton.....	115.29	111.98
Corn.....	107.57	115.98
Rice.....	126.55	110.00
Sugar.....	89.89	104.86
Sorghum.....	100.86	104.65
Peas.....	100.58	107.20
Oranges.....	103.33	101.83
Onions.....	100.95	101.41
Sweet potatoes.....	107.39	107.06
Irish potatoes.....	101.81
Oats.....	107.78
Hay.....	99.00

Commenting on these facts, the Times-Democrat says:

"The only decreased acreage is in sugar, attributable to the very demoralized condition of the sugar market last year, which made this crop unprofitable. This loss in acreage, however, does not indicate any land withdrawn from cultivation, as the land taken from sugar was planted in rice, corn or cotton.

As for the condition of the crops, it is far above the average in every instance but one, and is improving every day. The crops are better in August than they were in July, and better in July than in June; and they are growing now even better and promising a larger yield.

With this combined increase in acreage and condition of cotton it promises, even should there be no further improvement, an increased production over the average of 29 per cent., or more than 100,000 bales; of corn, an increase of 24.6 per cent.; of rice, 38.6 per cent. The only decreased yield probable is in sugar, 6 per cent. The greatest improvement, it will be noticed, is in the more important crops. Corn, rice and cotton include about nine-tenths of all the acreage under cultivation in the State, so that it can safely be said that the agricultural productions of Louisiana promise to be between one-fourth and one-third greater than the average, the best showing made since the war, and probably the best ever made. It should moreover be remembered that these crops have been made this year at far less cost than usual, all plantation supplies ranging low and labor generally being cheaper than heretofore. This should leave a larger surplus in the hands of the farmers.

The planters and farmers, and the whole people of the State, are to be congratulated on this happy showing, which promises to lift Louisiana out of any present feeling of depression and restore her to the utmost prosperity."

It would be an easy matter to fill up every page of the MANUFACTURERS' RECORD with just such glowing crop reports as the foregoing. Enough, however, has been given to show what a wonderfully bright prospect the South now has for prosperous times.

THE increasing business of the Woodstock Iron Co. and the Anniston Land and Improvement Co., of Anniston, Ala., have necessitated some changes, and Mr. Samuel Noble, the secretary and treasurer of the former company, announces that Mr. F. M. Hight has been appointed manager of both the iron and land companies, and that Mr. V. H. Marshall succeeds Mr. Hight as cashier of the Woodstock Iron Company.

Need of Banking Capital in the South.

The great need of more banking capital in the South has been repeatedly mentioned in the MANUFACTURERS' RECORD. An editorial upon this subject published some months ago was very freely commented upon by the Southern papers, a few of them claiming that the MANUFACTURERS' RECORD was wrong in stating that business was restricted in many places by the lack of banking capital. That our position was correct admits of no question. Discount and interest rates throughout the South are entirely too high for the good of all business interests except that of lending money. It is almost impossible for trade and manufactures to reach their full development while money commands such exorbitant rates as are current in the South. The Evening Capitol, of Atlanta, has lately very clearly pointed out the disadvantages under which Southern merchants and manufacturers labor, paying as they do anywhere from 9 to 15 per cent. or more for money, in competition with Northern houses, where rates run from about 3 or 4 to 6 per cent. Banking facilities in the South are entirely inadequate to the volume of trade, and this very fact seriously hinders the growth and development of that section.

Money is almost going a begging in the financial centers of the North. Millions of dollars are constantly being invested at 3 per cent., and in some cases at even lower figures, while millions more are now lying idle yielding no profit whatever. The owners of this money would, of course, be only too glad to find thoroughly safe investments at 6 to 10 per cent. There is room in the South for the investment of many millions at such rates, and where the investment would be almost or quite absolutely safe. There are good openings for probably over a hundred banks where such institutions are badly needed, and where a very profitable banking business would depend simply upon the proper business management. Possibly there may be a good many more than a hundred such places in the South, but certainly that number could easily be found. Even the larger cities of the South, with but few exceptions, lack sufficient banking capital.

Now that the outlook for the crops is so good and the certainty of a large volume of trade in the South so nearly assured, there ought to be a strong effort on the part of Southern people to place these facts before the moneyed men of the North. They ought to be convinced that there are splendid openings for the profitable investment of money in establishing banks at many places where they are now so badly needed. With proper efforts and by direct personal work we believe that very large sums of money now idle or yielding only a small income could readily be transferred from the North to the South, to the great benefit of both sections.

The South must have more banking capital for her merchants and manufacturers, and especially the latter, to reach the highest state of prosperity. Now is the time to move in the matter.

ATLANTA, GA.

ITS HISTORY, PROGRESS, ETC.

The Gate City is One of the "Boomers."

Atlanta may with truth be called "The Phoenix of the South." In 1864 there were but 600 houses left out of over 6,000. The remainder succumbed to the horrors of the civil war. Her population in 1865 was 10,000; in 1870, 22,000; in 1875, 30,000; in 1880, 37,500, and in 1885, 56,837. She has gained in the last five years over 50 per cent. in population.

Her public buildings, private dwellings, schools, churches, hotels, banks, stores, factories, etc., are models of architecture, being substantial in build and modeled after the latest and most modern designs. The city presents a magnificent and solid aspect to the beholder, and evidences of thrifty progress abound on every hand. There are 1,200 retail business houses and 106 wholesale, which, with her banks, cotton and other factories and railroad corporations, do a business of over \$107,000,000 annually.

She has 9 grammar, 2 high and 10 private schools. She has 60 white and 8 colored churches, with a seating capacity of over 37,000 and a membership of over 10,000.

Her newspapers number 20, with a capital of over half a million dollars. There are 7 banks, 3 cotton mills, 3 cotton compresses, 1 cotton seed oil mill, 7 railroad shops, 1 watch factory, 10 brick yards, 14 foundries, 4 furniture factories, 4 flour and grist mills, 3 broom factories, 11 planing mills, 13 patent-medicine concerns, 2 shuttle works, 2 paper mills, 2 trunk factories, 2 ice and 2 soap factories, 13 saw mills, 1 bridge works, 1 saw works, 7 marble and stone yards, and hundreds of smaller manufacturing industries, numbering altogether 494 manufacturing establishments, employing nearly 12,000 hands, with a wage list annually of nearly \$5,000,000.

According to the 10th Census United States, Atlanta is the third city in the Union in manufacturing rank—that is, in percentage of population employed in manufacturing. Lowell and Lawrence, Mass., alone excel her—the former with 50 per cent.; the latter with 49 per cent. Atlanta's percentages is 46—an excellent exhibit.

A BIG COTTON MARKET.

As a cotton mart Atlanta is ahead of every other interior mart in the South. Her cotton receipts in 1885 have reached 175,000 bales. She has warehouses capable of storing 45,000 bales, and 3 compresses with a capacity of 3,000 bales a day. As the cotton trade has rapidly increased in the past so will it increase in the future. She is right in the cotton belt. Her railway facilities are great and growing, and her merchants are alive and enterprising.

ATLANTA'S RAILWAYS.

I quote from Col. I. W. Avery's valuable work, "Atlanta and Georgia Portrayed," published by him under direction of the "General Information Committee of the National Commercial Convention," which met here in May of the present year:

"Atlanta occupies to-day a position almost unparalleled in the South, in its peculiar relations to the great railway systems that seek to control the transportation business between this section and both the North and West. She is the focal point in Georgia of four stupendous railroad combinations—the Central, the Richmond & Danville, the East Tennessee, Virginia & Georgia, and the Louisville & Nashville systems of railway, including thousands of miles of track radiating through a quarter of the vast Union, and involving hundreds of millions of property.

Besides this, through the Georgia Railroad, Atlanta connects with the great Coast

Line system. She has direct communication with Brunswick, Savannah, Port Royal, Charleston and Norfolk, the South Atlantic seaports. She is on the grand trunk air-line route from New Orleans to Richmond, Washington, Baltimore, Philadelphia, New York and Boston. She has by the Georgia Pacific direct connection through the measureless iron and coal mines of Alabama with the valley of the Mississippi river. She is on the dividing line between the West and the ocean, the cotton belt and the mountains. And by the Central and East Tennessee, Virginia & Georgia systems she grasps the vast travel and orange traffic from Florida.

It is no accident that this supreme pre-eminence has fallen to Atlanta, but it is the result of adequate causes—her geographical advantages and the enterprise of her citizens.

Atlanta has now 8 trunk railroads terminating in the city: The Georgia Railroad, 171 miles, to Augusta, completed 1843; Macon & Western, 103 miles, to Macon, completed 1845; Western & Atlantic, 138 miles, to Chattanooga, completed 1851; Atlanta & West Point, 87 miles, to West Point, completed 1855; Air Line, 269 miles, to Charlotte, completed 1873; East Tennessee Road, 85 miles, to Macon, completed 1882; East Tennessee Road, 91 miles, to Rome, completed 1883; Georgia Pacific, 175 miles, to Birmingham, completed 1883; the Marietta & North Georgia, to Ellijay. These railroads have various branches and feeders penetrating all sections of Georgia and surrounding States.

These lines have all been extended and enlarged. The Georgia Railroad now embraces 318 miles of road; the Macon & Western, now the Central, includes 1,455 miles; the Atlanta & West Point runs through cars to Montgomery, Mobile and New Orleans; the Air Line is part of the Richmond & Danville system of over 2,550 miles, and the East Tennessee, Virginia & Georgia scheme embraces fully 2,575 miles; the Georgia Pacific is being extended to the Mississippi river; the Marietta & North Georgia will soon penetrate North Carolina.

THE CENTRAL RAILROAD.

This vast scheme connects Atlanta with Macon and Savannah, and by ocean steamer with the Northern Atlantic seaports. By the Southwestern Road it gives our Gate City a straight railway across to Southwestern Georgia and Florida, and also by way of Columbus with Alabama. Goods are shipped from New York to Atlanta by one continuous freight system under one management.

THE GEORGIA RAILROAD.

The Georgia Road has a powerful bank connected with it—one of the most solid institutions in the State.

This railroad passes through and into 20 counties of the State—the richest and most fertile, taking them as a whole, having an aggregate of \$98,838,879 of wealth and \$37,316,280 of city property, manufacturing \$16,380,164 of products and producing a total of \$12,085,076 of farm crops, including 158,968 bales of cotton and 5,050,000 bushels of grain.

This road connects Atlanta with the Richmond Air Line, the Wilmington Coast Line and the Charleston steamers by the venerable yet vital South Carolina Railroad, thus being the conduct pipe, as it were, for three vast leading lines of transportation to the North.

THE GEORGIA PACIFIC RAILWAY.

This road is an extension of the Richmond & Danville system. Its line as located and partly completed extends from Atlanta, the capital of Georgia, directly westward through Anniston and Birmingham, Ala., to Columbus, Miss., and thence either to Greenville, on the Mississippi river, or to Arkansas City, higher up. From its point of crossing it may have additional lines of extension into Texas, and finally to the Pacific coast.

The Richmond & Danville system has 2,229 miles of road now in operation, and connecting Atlanta with the States of Vir-

ginia, North Carolina, South Carolina and Georgia in such a way as to link their most important points with Washington, Baltimore, Philadelphia and New York. To this system the Georgia Pacific Railway, with its branches, when completed, will add 700 miles, and will open up a region of country exceedingly rich in mineral, forest and agricultural resources, a large proportion of which has hitherto been without even the ordinary facilities for transportation.

THE EAST TENNESSEE, VIRGINIA & GEORGIA RAILROAD.

This extensive railroad system connects Atlanta direct with Rome and Macon; gives a second straight line to the Atlantic, terminating at Brunswick, our own port, and offers a grand trunk line to the North by way of East Tennessee. It affords a continuous freight alike to Norfolk and our own sea coast.

THE WESTERN & ATLANTIC RAILROAD.

This road, known as the State Road, was built by the State to give us connection with the great West. It was finished in 1850. It was destroyed during the war and rebuilt by the State, and the bonds will be due in 1886 that were used for the purpose.

This line of road has been a powerful little railway in the Southern transportation schemes, holding its monopoly of strength and business amid toppling syndicates; unaffected in rush of great changes and the war of massive systems; making all the stupendous enterprises of steel track, represent-

the city in all of its conditions, and it is one of the healthiest in the country.

REAL ESTATE.

The rate of taxation is but 1½ per cent.; has not been higher for the past 14 years. There are over 20 real estate firms in existence and nearly all are actively employed. The building of new houses has averaged 1,500 a year since 1880. She has 10 miles of paved streets and 100,000 feet of sewerage. A large amount of foreign capital has been invested, and street improvement is the order of the day.

PARKS AND SPRINGS.

Peters' Park, a beautiful site, has 220 acres, 65 of which will be laid out into streets and squares. The remainder will be divided into large lots for residence property.

Grant Park, 100 acres, another lovely spot, is to be one of the most charming parks in the South.

Ponce de Leon Springs, three miles from town. Both parks and springs are reached by street cars. Ponce de Leon has several springs very valuable for their curative powers in all kidney complaints.

FRUITS, VEGETABLES, ETC.

The climate and the soil combine to make fruit growing a valuable source of revenue to the large number of persons engaged in it. One man has over 60,000 peach trees bearing, and ships in the season from 5,000 to 6,000 crates daily. Good market gardeners can come here and get rich in a few years.



THE NEW CAPITOL BUILDING.

ing millions of aggressive capital, pay tribute to its sovereignty. This road joins Atlanta to Chattanooga, where the great Louisville & Nashville system, with its net work of railways over the immense West, and the Cincinnati Southern tapping the Northwest, pour a vast volume of business.

THE MARIETTA & NORTH GEORGIA RAILROAD.

It now has a potential feeder in the narrow gauge railroad called the Marietta & North Georgia Railroad, which bids fair to revolutionize the marble and stone business of the South. The section it taps is a wonder of health, beauty and mineral wealth, as well as a royal farming country. There is inexhaustible marble and great quantities of gold and copper.

THE ATLANTA & WEST POINT RAILROAD

now give to Atlanta all the advantage that she possesses of direct connection with the gulf by the Atlanta & West Point Railroad, and it will be seen that her railway opportunities are simply unsurpassed. This road links her to Pensacola Mobile, New Orleans and the great Southwest."

THE CLIMATE.

Her altitude is 1,050 feet above the level of the sea and 500 feet above the level of the Tennessee and Cumberland rivers. She is absolutely free from all malaria, and the air is breezy and delightful, even in the warmest of summer months. She has never had an epidemic, and her death rate for the last 4 years has been but 21 in 1,000. Her sanitary regulations are admirable. Take

TO SUM UP.

Atlanta, with her superior geographical position, equable climate, nearness to coal, iron, marble, gold, copper, lumber, etc., offers to enterprising men of means and brains unsurpassable opportunities for investing their money, and doubling and quadrupling it in a few short years. There are plenty of opportunities awaiting for men who will seize them by their forelocks and make them yield up their golden treasures. Being the gateway of the South, the center of Dixie, the pivotal point of all the States south of the Ohio river, west of the Atlantic ocean and east of the Mississippi river, Atlanta has the winning hand in the game of Southern progress, and to those who come bringing sense, judgment and energy, she will deal it unsparingly.

THE NEW CAPITOL BUILDING.

The State of Georgia is now building a magnificent structure, to be used for State purposes, in Atlanta. It is being built by Messrs. Miles & Horn, of Toledo, O., from designs made by Edbrooke & Burnham, Chicago, Ill., architects. Both of these firms secured their contracts from the "Board of Capitol Commissioners," and were selected by said board from a number of competitive bidders.

The board consists of Henry D. McDaniel, governor and ex-officio chairman; E. P. Alexander, Philip Cook, E. P. Howell, A. L. Miller and W. W. Thomas. W. H. Harrison is

clerk. Mr. E. P. Howell was chosen to succeed Benj. E. Crane, deceased.

The stone for the building is the celebrated oolitic limestone, which has been and is daily being preferred for many of the finest and most expensive buildings in the United States, from New York to New Orleans. It is cheaper than and as durable as either granite or marble, while the chances of rust, stain or discoloration are decidedly less. It is furnished by the "Salem Stone & Lime Company," of Louisville, Ky., and comes from their quarries in Salem, Ind.

THE ARCHITECTURE

is that of the Classic Renaissance, with irregular outline in plan, showing on the main front a central projection of imposing dimensions and a massive portico emphasizing the main entrance.

Centrally through the building the open rotunda extends from the first floor through the upper stories to a height of 172 feet, and on the north and south of the rotunda a grand corridor rises to a height of 80 feet, surrounded by a gallery on each floor. A grand stairway gives access to the upper floors; an elevator runs from the basement to the top story, and a stairway leads also to the top of the dome lantern.

Rising above the main roof is the stately dome, attaining a height, exclusive of the statue, of 237 feet 4 inches, surrounded by a colonnade appropriately embellished, and furnishing a marked and striking feature of the building.

The construction is to be as near fire-proof as is practically possible, the floors being supported by stone arches and wrought iron floor beams. The halls, entrances and corridors will be floored with marble or tile.

Sewerage, drainage, ventilation and heating will be attended to after the latest approved plans. Special attention will be paid to the ventilation and heating, because it is expected that many of the sons of Georgia

It is expected that the building will be finished in a little over 3 years from date; and when it is, Georgia may be proud of her capitol building.

The cut here shown gives the reader of to-day an idea of the building as it will appear in 1889.

ATLANTA CHAMBER OF COMMERCE.

This building was completed in December of last year and was occupied by the association in that month. It is a five-story building, including basement. Fay & Eichberg, architects. It cost \$36,500, and the lot upon which it stands cost \$13,400. It is conveniently situated, being located at the corner of East Hunter and Pryor streets, opposite the Fulton County Court House. The first floor is occupied by the city government. The chamber was organized on the 22d of July, 1871, and reorganized May 14, 1883. Membership, 204; secretary, H. M. Cottingham.

architects and builders are Bruce & Morgan, of Atlanta, who make a specialty of court-houses and public buildings.

AS A SUMMER RESORT.

Atlanta is fast becoming a good place to pass the warm months. The thermometer behaves sensibly, both winter and summer. The highest portions of the city are over 1,150 feet above sea level; the air is ever fresh and pure; an epidemic was never known, and in the warmest of weather the nights and mornings are delightfully cool and pleasant.

The old idea of the seashores of the north-east being the proper place for a Southerner to summer at is exploded. Now the Georgian remains at home and invites his Northern friends to come South in July and August. The writer has found it much warmer at Long Branch in July than he finds it here. A Northern gentleman who

per cent. of the present census, and any one in his senses cannot help but call the thing phenomenal. It has surprised its owners more than any one else. It is a marvel in cheap journalism. It is delivered at any house in Atlanta six days for 6 cents, or 25 cents per month. Col. I. W. Avery, a journalist of high repute and one of the best known gentlemen in Georgia, is the editorial manager.

THE GRANT HOUSE.

A very nice, quiet, roomy hotel is the Grant House. It is located on Whitehall street, between Hunter and Mitchell streets, and is just three blocks from the Union Passenger Depot and five from the post-office. It is kept by Mrs. N. N. Archer, a most estimable Georgia lady. Her brother, Mr. Jessie G. Rucker, is business manager. The rooms are large, airy and nicely furnished; table good, and transient rates but \$2 per day.

PROMINENT BUILDINGS.

There are many fine buildings in Atlanta. The most prominent are the new Kimball House, Gate City National Bank, county court-house, Chamber of Commerce, Constitution Building (newspaper), the present capitol and the post-office. Our cuts show the Kimball, county court, Chamber of Commerce and the new capitol buildings—the latter now building.

THE POST-OFFICE.

This is really a magnificent structure, and I am very sorry I could not get a cut of it, so that your readers might see a post-office building which is only excelled by a dozen others in the Union. It is located on Marietta street, one of the principal thoroughfares, and is an excellent specimen of government architecture. The present postmaster, Mr. W. T. B. Wilson, is an exceedingly pleasant gentleman.

THE CONSTITUTION BUILDING.

This is a large and commodious building erected and owned by the Constitution Publishing Company. Their paper, the Constitution, is one of the authorities in the South, and has, I believe, the largest circulation of any paper south of Louisville.

THE NEW H. I. KIMBALL HOUSE.

This is the finest hotel in the Southern States. It was completed during the present year, and was formally opened on February 1st. The building is seven stories high, occupies nearly one whole block, and cost, including furniture, etc., \$625,000. The style of architecture is Venetian, and the building is practically fire-proof. It was built by Scoville, Beermann, Thompson & Co., and Scoville, Beermann & Co. are the lessees. The house contains about 430 rooms and can accommodate 1,000 persons. The main entrance is on Pryor street, and this opens into a very handsome arcade. On the third floor is a good-sized ball-room. There are two passenger and three freight elevators. The kitchen and laundry are said to be the best equipped in the country. Take it altogether, the city of Atlanta may be justly proud of this new and magnificent hotel.

E. V. Clarke, Esq., No. 11 East Hunter street, president of the Atlanta Book and Paper Publishing Co., has published two or three editions of the "History of Atlanta," which gives in detail the early history and present status of the Gate City. 250 pages. Price 75 cents, post-paid. FONT.

OUR readers throughout the South will confer a favor if they will send us a few lines as to the prospects for the cotton, corn and tobacco crops and the outlook for the fall business.

PERKINS BROTHERS, Atlanta, Ga., dealers in steam engines, saw mills, cotton gins, presses, separators, wood-working machinery, belting, machinery oils, etc., etc., report an improvement in their business and look forward to a large fall and winter trade.



FULTON COUNTY COURT HOUSE.

FULTON COUNTY COURT HOUSE.

The above building is the Fulton County Court House, erected in Atlanta, Ga., at a cost of \$100,000. For beauty and convenience this court-house building is unsurpassed by any in the South. The plan is arranged for all the various county offices and courts, and also contains the largest public hall for

has lived here during the past three years told me that he never goes to his old home in summer; but he runs up there about the holidays to visit his old friends and relatives, and to keep up his knowledge of the appearance of snow.

A PHENOMENAL NEWSPAPER.

The Atlanta Evening Capitol, a recently



NEW H. I. KIMBALL HOUSE.

conventions, mass meetings, etc., in the State. The arrangements for steam heating and ventilation are complete and perfect, and all the clerks' offices are absolutely fire-proof. The building is supplied with all the gas and water conveniences, and in every way is a modern, first-class public building. The

established penny paper, issued its first number on the 4th day of July, 1885, and on the 25th day of same month,—just three weeks,—its actual number of paid subscribers was 5,162—a remarkable showing for a new paper, and in a city with a population of 56,837. It is very nearly 10



ATLANTA CHAMBER OF COMMERCE.

will often get heated while ventilating their views. N. B. This last paragraph is not copyrighted.

Massive pilasters with carved capitals sustain the entablature, and give elegance and variety to the building. The pediment over the main entrance, supported by six monolithic columns, contains a carved representation of the coat of arms of Georgia.

DIMENSIONS.	Feet.	Inch.
Length of west and east fronts.....	325	1
Width of north and south fronts.....	172	11
Width through center, east to west, (including portico).....	272	8½
Width through center, north to south.....	347	5
Height of basement.....	11	3
Height of boiler department.....	16	9
Height of principal story.....	16	..
Height of second story.....	20	..
Height of third story rooms, 14 feet; corridors.....	16	..
Height of House of Representatives.....	43	..
Height of Senate Chamber.....	43	..
Height of Supreme Court room.....	22	..
Height of Law Library.....	20	..
Height of State Library.....	39	..
Height of dome to top of lantern.....	237	4
Diameter of dome at base.....	75	5
Diameter of rotunda.....	48	7

CONSTRUCTION DEPARTMENT.

WE PUBLISH, every week, a list of every new factory, of whatever kind, projected anywhere in the South; every railroad undertaken, and every mining company organized. This information is always fresh, and, by enabling manufacturers to correspond with the projectors of such enterprises before their supplies of machinery have been purchased, is of great value. Manufacturers will find it to their interest to read this department carefully each week.

The New Industries of a Week.

As compared with the corresponding time last year, the industrial activity of the South is somewhat remarkable. From the 1st of June to November 15, 1884, the weekly list of new enterprises organized in the South, as published in the MANUFACTURERS' RECORD, was very short, occupying only from a column and a-half to three columns, averaging about two and a-half columns a week. Since the 1st of June this year this list has been running at from four to six columns a week, or fully double the space occupied during the same months of 1884. Now that large corn and cotton crops are considered sure, arrangements are being made for a much greater activity in the organization of new enterprises than has yet been seen. The second week of August shows up with quite a long list of important industries just organized. In Alabama the rumor reported last week of a flour mill to be built in Birmingham is confirmed by the purchase of a site for a \$40,000 mill, the full capital having been subscribed; the Calera Land Co., the organization of which, with a subscribed capital of \$500,000, was reported last week, it is rumored will erect an iron furnace and a cotton seed oil mill; at Huntsville a compress has been built; at Calera a barrel and stave factory and a brick yard are to be established; at Georgiana another saw mill has been put up; Jonesborough and Hanceville are receiving the machinery for their new grist and saw mills, while Montgomery has decided to spend \$200,000, or as much thereof as may be necessary, to build water-works. Florida reports a \$50,000 gas and electric light company organized at Orlando; a brick yard, saw and grist mills, &c. Georgia has organized a \$50,000 railroad construction company; \$20,000, the full capital, has been subscribed for a new fertilizer factory at Newnan, previously reported as being worked up; \$7,000 is being spent to enlarge a lithographing establishment, and machinery for Albany's compress is nearly ready, while a number of railroad companies have asked to be incorporated. Kentucky has a \$300,000 cable railway machinery company, a \$100,000 gas machine company, and a \$60,000 gas company, organized during the week, besides smaller enterprises. A \$10,000 glass manufacturing company, and a \$15,000 water works company have been organized in Maryland, while arrangements are being made for establishing a hosiery factory in the same State. In North Carolina, Dr. Clark Whittier, whose late purchase of 60,000 acres of land, with a view to cutting timber, attracting immigration, laying out a city, &c., was duly noted, has added 6,000 acres more to his purchase. Goldsboro and Durham are figuring on water works; considerable new machinery is being put into mines, and a number of small industries established. The purchasers of the Camperdown Cotton Mills, in Greenville, S. C., have organized and are preparing to start the mills up; Beaufort's new foundry and machine shop is well under way. In Memphis,

Tenn., contracts have been awarded for the 400-barrel flour mill; Maryville is to have a furniture factory; the large planing mills lately burned in Memphis will be rebuilt at once, and a large wood-working factory in Chattanooga nearly doubled in capacity. Texas has organized a \$25,000 milling company, a \$10,000 canning company, and a \$25,000 soap company, while West Virginia has a car ventilator manufacturing company with a capital stock of \$1,000,000, reported all paid up; prospective boiler works in Charleston and water-works in Charlestown.

ALABAMA.

The flour mill previously reported as to be built in Birmingham, Ala., is to be put up by W. G. Wharton and others, of Montgomery, Ala., who have purchased ground for a \$40,000 mill and elevator.

W. H. Hubbard, clerk to the Board of Revenue, Montgomery, Ala., will receive bids till September 7, for the erection of a brick jail.

The Calera Land Co., the organization of which was reported last week, it is rumored will erect an iron furnace and a cotton seed oil mill at Calera, Ala. J. R. Adams, Montgomery, Ala., is the general manager.

A saw and planing mill have recently been built at Georgiana, Ala.

Harold, Bro. & Scott, Brewton, Ala., it is stated, will rebuild their saw mill.

The Curry Manufacturing Co., Huntsville, Ala., have built a cotton compress that will be put up in that city.

P. H. Moore & Co., Birmingham, Ala., have received a contract at \$9,250 for building a school in that city.

There is talk of establishing a mattress factory in Anniston, Ala.

A cigar manufactory will be started in Huntsville, Ala.

W. S. Reese, T. H. Carr, J. W. Hale and Thomas Williams, Committee on Public Works, Montgomery, Ala., are corresponding with contractors and others to find the probable cost of water-works for that city. The city has been authorized to issue \$200,000 in bonds with which to build water-works.

A large four-story brick building is being erected in Birmingham, Ala., by Jos. Wilson.

D. B. Sapp & A. Griffith are receiving the machinery for their new steam mill and gin at Hanceville, Ala.

J. A. Hall, Jonesborough, Ala., previously reported as building a grist mill, is also erecting a gin. Part of machinery has been received.

J. H. Duran, Calera, Ala., is making arrangements to manufacture bricks.

John W. Hardy, Calera, Ala., is erecting a new engine at his lime works, and putting in new and improved machinery for a barrel and stave factory.

ARKANSAS.

Lane, Sides & Young, Rector, Ark., are putting up a steam ginery.

It is reported that electric lights are to be established in Helena, Ark.

FLORIDA.

Efforts are being made to build a \$100,000 hotel in Orlando, Fla.

Grading on the Sanford, Fla., & India River Railroad is to be commenced at once.

W. R. Anno, N. L. Mills, Nat. Poyntz, T. J. Shine and J. B. Paramore have organized at Orlando, Fla., the Orlando Gas & Electric Light Co., capital stock \$50,000, to establish gas and electric light works.

A brick yard has been established in Sanford, Fla., by Mr. Weiskoff.

T. J. Edwards, Garden City, Fla., has recently completed his saw and grist mill.

There is talk of a street railway in Bartow, Fla.

Pensacola, Fla., is considering the building of water-works.

F. Lozano, of Lozano, Pendas & Co., New York, reported last week as contemplating the removal of their large cigar factory to Jacksonville, Fla., reports that they have about concluded to make the change.

Work on the new opera house at St. Augustine, Fla., has been commenced.

GEORGIA.

Burden & Son, lithographers, Atlanta, Ga., are spending about \$7,000 for new machinery.

Bills have been introduced in the Georgia legislature to incorporate the Georgia Midland & Gulf Railroad Co., the Savannah & Tybee Railway, the Savannah & Western Railroad Co., the Athens & Columbus Railroad Co. and the Rome Street Railroad Co.

Machinery for the compress previously reported as to be built in Albany, Ga., will shortly be ready to put up.

Adams Bros., Chattanooga, Tenn., have received contracts for building a \$27,000 school-house in Atlanta and a \$25,000 school-house in New Orleans.

J. S. Morris, Atlanta, Ga., who has lately established a brick yard, expects to double its capacity shortly.

The Coweta Fertilizer Co., previously reported as organized in Newnan, Ga., to build a fertilizer factory, has been duly incorporated, the capital stock, \$20,000, having been all subscribed; will erect a fertilizer factory.

Evan P. Howell, of Atlanta; Geo. Adair, James W. English, Moses Joseph, Cliff B. Grimes, Louis F. Garrard and Wm. Reed, Jr., have incorporated in Muscogee county, Ga., the Georgia Midland Construction Co., to build railroads, bridges, saw mills, and do a general construction business. Capital stock \$50,000, with privilege of increasing to \$1,000,000.

Mr. Gress, Gress' Mill, Ga., has erected new engine and boiler and added other machinery to his planing mill, doubling the capacity.

M. A. Adams will put up a flour mill at Gun Log, Franklin county, Ga.

KENTUCKY.

A new distillery is to be built in Uniontown, Ky.

The Lane National Cable Railway Co., capital stock \$300,000, has been organized in Covington, Ky., by H. N. Lane, G. B. Kerper, S. M. Lemont, Albert G. Clark and John Kilgour, to manufacture cable railway machinery.

Benj. P. Easton, E. S. Stuard, T. B. Lee, E. K. Sumnerwell and A. J. English, have organized in Covington, Ky., with an office in Cincinnati, O., the Star Manufacturing Co., to manufacture gas machines. Capital stock \$100,000.

W. H. Clarke, Owensboro, Ky., has commenced the erection of a 3-story addition 56 x 100 feet to his tobacco factory.

Mr. Woolum, of Ohio, has erected a saw mill on the land of M. B. Penebaker, Upper Tygart, Ky.

W. B. McDonough, of Cincinnati, O., and Thomas Wells, John Heiser and Dr. W. S. Moores, of Maysville, Ky., have incorporated in Maysville, Ky., the Citizens' Gas Light Co., to build gas works. Capital stock is not to exceed \$60,000.

The Eastern Kentucky Railroad Co. are building five miles of road in Carter county, to be known as the Barrett's Creek Branch.

B. Baer, Owensboro, Ky., states that he will erect in that city a 12-ton ice factory.

LOUISIANA.

Moore & Appel, Shreveport, La., have received contract for clearing and grading first section of the Texarkana & Northern Railway from Texarkana to McKinney, Bayou.

Samuel H. Buck, Director-General of the New Orleans Exposition, invites proposals for furnishing electric lights to the Exposition.

Kelly Bros., near Donaldsonville, La., previously reported as intending to rebuild their large rice mill, are preparing to commence work on it.

Gebbert & Russell, Attakapas, La., have rebuilt their shingle mill, burnt several months ago.

MARYLAND.

D. S. Truitt, Greensborough, Md., has established a fruit canning house.

Bennett & Barnes, Sykesville, Md., will engage in making wagons.

The Co-operative Druggists Glassware Manufacturers' Association has been organized in Baltimore by Michael J. McHenry, Hardman Shaw, Anthony Kelly, John W. Smith, and others, to establish a glass factory; capital stock, \$10,000.

Jacob Hess, Waynesboro, Pa., will establish a hosiery factory at Hagerstown, Md.

Lawrence B. McCabe, Wesley W. Reynolds, James A. Davis, John R. Bond and Charles A. Shure have organized at Port Deposit, Md., the Port Deposit Water Co., capital stock \$15,000, to build water-works in that town.

Graham & Schmidt, Baltimore, furniture manufacturers, will erect a 4-story warehouse.

A saw mill and the frame wood-work of a new grist mill, both owned by Henry Reckord & Son, of Reckord, Md., were washed away by the late storm.

MISSISSIPPI.

It is reported that a compress will be built at Grenada, Miss.

A broom factory has been started at Gallman, Copiah county, Miss.

NORTH CAROLINA.

J. E. Speir, Bell's Ferry, N. C., previously reported as intending to start a distillery, will commence operations about September 15.

Dibrell & Walker, Henderson, N. C., will erect a tobacco house 40x100 feet, 4½ stories high.

James Wilson, Wilmington, N. C., will, it is reported, build 50 dwellings.

Sprague & Hart, Old Fort, N. C., will establish a tobacco hogshead factory.

The Royster Mining Co., near Blue Wing, N. C., will put in new machinery. The Harris Copper Mine, near the same place, will also put in new machinery. It is reported that these companies intend to build a 16-mile railroad from Blue Wing to Clarksville, Va.

A tobacco prize house, 140x44 feet, three stories, is being erected in Durham, N. C., by T. C. Williams, of Richmond.

Goldsboro, N. C., will decide by popular vote, September 14, whether or not to issue \$35,000 of bonds for the purpose of building water-works. J. W. Gulick, Mayor of Goldsboro, can give particulars.

LOCKWOOD, GREENE & CO.

MILL ENGINEERS.

Office, 65 Westminster St., Providence, R. I.

Carefully prepared plans, specifications and estimates furnished for the construction, equipment and organization of new mills and the revision and improvement of old.

A steam distillery is being erected near Winston, N. C., by ex-Collector Wheeler.

Fourteen new bag looms are being placed in the Naomi Falls Cotton Factory, High Point, N. C.

A steam laundry, it is stated, will be started in Tarboro, N. C.

Dr. Clark Whittier, lately reported as having purchased 60,000 acres of land in Swain county, N. C., on which he would erect saw mills, lay out a town, etc., has purchased 6,000 acres more. Dr. Whittier's address a few weeks ago was Asheville, N. C., and mail will probably still reach him there.

S. P. Arrington, Warrenton, N. C., will receive proposals for building a tobacco warehouse.

Parties from New England will be in Durham, N. C., this month to examine into the practicability of establishing water works. Eugene Morehead, Durham, can give information.

SOUTH CAROLINA.

A company has been organized to build a narrow-gauge railroad from Spartanburg, S. C., to Glenn's Spring, S. C. D. R. Duncan, Spartanburg, is president.

A preliminary organization has been effected as the Augusta & Edgefield Railroad Co., with R. M. Mitchell, of Augusta, Ga., chairman, to build a narrow-gauge railroad from Augusta to Newberry, S. C.

The "Carteret Mills," Beaufort, S. C., previously reported building a foundry and machine shop, is a new enterprise established by F. H. Folsom, lately of Baltimore, with C. Townsend, superintendent.

A. & W. McQueen, Beulah, S. C., are building a ginney.

The syndicate that purchased the Camperdown Cotton Mills at Greenville, S. C., as reported last week, has organized as the Greenville Cotton Mills; H. P. Hammett, president. The company will prepare to start the mill up again.

W. H. Mayes, Bradley, S. C., is rebuilding his gin house, burned last year.

TENNESSEE.

The Tennessee Ridge Manufacturing Co., Erin, Tenn., want to buy a plow handle machine.

Bristol, Tenn., and Goodson, Va., have each voted a subscription of \$25,000 towards the building of the South Atlantic & Ohio Railroad. A Boston company has contracted to build this road to Estillville by September, 1886. When built this road will open great coal, marble and timber wealth.

The Citizens' Mutual Gas Light Co., (Sam Strauss, manager,) Chattanooga, Tenn., expect to shortly enlarge their work.

N. C. Boyd, of Little River, Tenn., has purchased ground in Maryville, Tenn., intending to remove his furniture factory to the latter place.

Loomis, Hart & Co., Chattanooga, Tenn., will enlarge their wood-working factory, put in new machinery, &c.

J. C. Atkins has established a fruit evaporating and canning establishment in Shelbyville, Tenn.

Mallory, Crawford & Co. will erect a \$7,500 brick warehouse in Memphis, Tenn.

O. I. Robinson & Co., Chattanooga, Tenn., will start a steam laundry, with J. D. Robinson as manager.

Curtis & Cogswell are replacing the machinery in the stove and saw mill of Dr. A. J. Weldon, Mouth Sandy, Tenn.

It is reported that the Dayton Coal and Iron Works, of Dayton, Tenn., will erect a steel plant as soon as they have completed their furnaces.

Williams & Co., Memphis, Tenn., whose extensive planing mills were reported last week as burned, will rebuild at once.

F. Campbell & Co. have established a steam shirt factory in Memphis, Tenn.

Titus, Angel & Daggett, of Spring City, Tenn., are erecting a saw mill on Dorton's Mountain, Tenn.

The flour mill previously reported to be erected in Memphis, Tenn., by Lanier & Co., of Nashville, will be six stories—50x86 feet. A three story warehouse, 50x150 feet, will be erected in the rear of the mill, and an elevator for storing wheat, 50x30 feet, of corrugated iron. Contracts have been awarded for the erection of the buildings. Capacity of the mill will be 400 barrels a day.

The contract for building the approach to the bridge at Nashville, Tenn., has been awarded to Marshall & Morris, of Louisville, Ky., at \$40,025.

Debbins & Parker are putting some new machinery into the Phoenix Mills, Paris, Tenn., to make tobacco boxes and barrel heads.

Jacob Peyer, who has leased the Chattanooga Cotton Factory, will add a large ginney.

TEXAS.

It is reported that the money has been secured for the construction of the Midland Railroad, from Waco, Texas, via Palestine to Shreveport. A construction company has been organized to build 25 miles.

The Shreveport (La.) and Houston (Texas) railroad will be completed by the receiver; work on it to be commenced at once.

Geo. L. Franklin and others, Lampasas, Texas, are investigating a coal mine near there, lately discovered, with a view to working it.

There has been some correspondence with parties in Denison, Texas, regarding the building of a car-wheel foundry.

The Pressed Soap Co., capital stock \$25,000, has been chartered at Houston, Texas.

The Atlanta & Mount Pleasant Railroad Co. will be chartered in Texas.

The East Texas Canning Co., capital stock \$10,000, has been chartered in Texas.

Brainard Larison, secretary of the Jenny Electric Light Co., will submit to the City Council of Corsicana, Texas, a proposition to light the city.

The Lewisville Mill Co., of Denton county, has been chartered at Lewisville, Texas; capital \$25,000.

Navasota, Texas, reported last week as figuring on water works, has received an offer from a company to build the water works for \$10,300. The Mayor can give particulars.

The water works, Fort Worth, Texas, are to be enlarged and new machinery, boilers, &c., added. Mayor of Fort Worth can give particulars.

VIRGINIA.

B. M. Davidson, Lowesville, Va., is repairing his flour mill.

Maj. W. T. Sutherland will erect a \$20,000 building in Martinsville, Va.

Frank Lyman, of New York, writes us that he will not build an iron furnace in Virginia, as rumored.

WEST VIRGINIA.

Henry Barton, of Middleport, Ohio, has leased ground in Charleston, W. Va., on which he will erect boiler works.

The American Car Ventilating Co. has been chartered in West Virginia, to manufacture car ventilators, by Jno. M. Fennerty and W. H. Armstrong, of Washington, D. C., Michael Shaughnessy, of New York, Ed. B. Wheelock and E. John Ellis, of New Orleans, La. Capital stock \$1,000,000, stated to be fully paid up. Principal office to be at Washington, D. C.

Charlestown, W. Va., has appointed a committee to inquire into the cost of building water works. The Mayor of Charlestown can give particulars.

A \$5,500 jail will be built at Union, W. Va.

BURNED.

Saw mill of Dyal & Upton near Callahan, Fla.; loss \$4,000 to \$5,000. Will probably rebuild.

The Marley Mill at Wilna, Md., badly damaged by late storm.

A \$40,000 Flour Mill.

MONTGOMERY, ALA., August 10, 1885.

Editor Manufacturers' Record:

I have associated myself with some other gentlemen in forming a stock company for the purpose of building a flouring mill. Capital stock \$40,000, paid in. While the company is not yet organized, among ourselves we have adopted the name Wharton Company Mills, and have bought the location at Birmingham, Ala. The next 40 days will be used in getting up our plans; meantime, organization will be perfected.

W. G. WHARTON.

A Machine Shop.

ELBERTON, Ga., August 6, 1885.

Editor Manufacturers' Record:

We are erecting a shop of general repairs, including machinery and all classes of carriage and wagon work. CLARK & ADAMS,

Outlook Promising.

CHATTANOOGA, TENN., August 5, 1885.

Editor Manufacturers' Record:

We expect to build warehouse and office 60x200 feet, brick, this fall. Our business is opening very good, and we are pressed with orders. The general outlook is promising, and it seems bottom has finally been touched. CHATTANOOGA FLOW CO

A Distillery.

BELL'S FERRY, N. C., Aug. 3, 1885.

Editor Manufacturers' Record:

I shall put up a small distillery at present. Will commence operations about the 15th of September. My building is 30x60 feet; will work three boilers or stills, with a capacity of 20 or 25 gallons per day. I may enlarge my business after a while. J. E. SPEIR.

Machinery Wanted.

ERIN, TENN., Aug. 5, 1885.

Editor Manufacturers' Record:

The Tennessee Ridge Manufacturing Co., Erin, Tenn., wants to buy a second-hand plow handle bending machine, or the iron for making a new one.

TENNESSEE RIDGE MFG. CO.

Making Cotton Ties.

CHARLOTTE, N. C., August 5, 1885.

Editor Manufacturers' Record:

We are buying scraps and old cotton ties, and use machinery to work them up in same style bundles as Northern pieced cotton ties. MARGOLIUS & CO.

Lime Works.

BLACK'S STATION, S. C., Aug. 4, 1885.

Editor Manufacturers' Record:

We have just completed a perpetual lime kiln of the latest improved patent, made of iron, 100 barrels per day capacity, with preparations for an additional one. Cost about \$5,000 so far, and have some of the best quality of lime rock known to the trade. Have been in the business five years. SIMON BROS.

A Virginia Mining Center.

Activity in Mining Operations.

EMILY MINES, VA., August 10, 1885.

Editor Manufacturers' Record:

Since writing to you last, a great many improvements have been going on in this part of Virginia's great gold belt. As I wrote you some time ago, we purchased this mine in May of the present year. We now have all our machinery up and running. Our mill is now running steady from 12 o'clock Sunday night to 12 o'clock Saturday night on \$20 ore. I am putting through 18 tons every 24 hours, and everything looks grand with our little enterprise, after so many failures have been made in Virginia by people who know nothing of mining at all but to spend the stockholder's money regardless of what the mine makes. My shaft will soon be down 150 feet, with ore enough in sight to last a long time. Our plant consists of one 80 horse-power boiler, one 40 horse-power engine, one 10 stamp mill, 2 full sets copper plates, 2 shaking tables, 1 Imlay concentrator, copper top. This is our mill plant. Our mill building is 80 feet long; 60 feet wide, 20 high, so that we have all our machinery plant under one roof, only in different rooms. The plant at the shaft is as follows: Size of shaft-house 50 feet long, 20 feet wide, 20 feet high, in which we have one 30 horse-power boiler, one Beckett & McDowell hoister, 15 horse-power, one 20 horse-power engine, with complete gearing, to run our 6 inch Cornish lifting pump, built by E. J. Codd & Co., of Baltimore. We also have in our shop one large No. 9 Cameron pump. Our other buildings consist of dwellings and store, in which we keep stock of goods for our hands; one blacksmith shop, with complete outfit; one carpenter and machine shop; oil house and powder magazine. Our mine, plant, and everything else, cost us \$30,000, and we expect from present prospects and mill runs to get back all of our original investment by January 1, 1886.

The Goodwin Mining Co. are now working their mines located very near here (their office is 35 S. Charles street, Baltimore.) The celebrated White Hall Mines are at work—owned by Senator Fair and others. The Furnace Copper and Sulphuret Mining Co. are pushing along with their works. The Chesapeake & Ohio Railroad Co. are building a feeder 4 miles long to these mines; it will be finished one month from now and trains running on it. The Adams Copper Mining Co. are working 150 men now raising copper sulphurets, and are shipping them to New York. A Philadelphia company have just bought a tract of land very near here and paid \$20,000 cash; will be at work in a week. T. J. MCSPEIDEN,

Supt. Emily Mining Co.
MINE RUN P. O., ORANGE CO., VA.

A Big Tobacco Factory.

ROANOKE, VA., August 10, 1885.

Editor Manufacturers' Record:

It is our intention very soon to commence enlarging our factory building by an addition of 40 feet, 3 stories high, mansard roof. When finished will have a capacity of half million pounds on 3 floors 36 feet wide, each 150 feet long. W. K. ANDREWS & CO.

Enlarging Wood-Working Factory.

CHATTANOOGA, TENN., August 10, 1885.

Editor Manufacturers' Record:

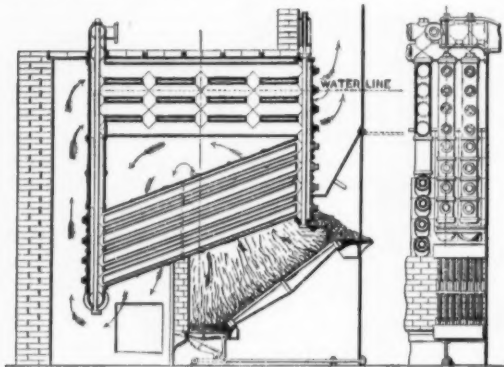
We contemplate some improvements and extensions at our works, but have not yet perfected our plans so as to give definite particulars. LOOMIS, HART & CO.

HOWARD & BULLOUGH & RILEY have just completed the erection in the Granite Mills, Fall River, of 12 of their improved roving frames.

Notes on Boiler Construction.

It is seldom that the changes and modifications which a successful mechanical design has passed through are given to the public. We are enabled, by the courtesy of the Babcock & Wilcox Co., to present to our readers in a condensed form the various modifications which their well-known water-tube boiler has passed through since its first introduction in 1867. The cuts not only show styles which were, at the time they were built, put out as their regular manufacture, but also many forms with which extensive experiments were made to determine their practical value, and include several styles of boilers originally built by other parties, the patents for which were subsequently purchased by the Babcock & Wilcox Co. on account of their close approximation to their system of inclined heating tubes connected to an elevated steam and water reservoir, having a continuous circulation of the water through the same, and a passage of the heated gases at right angles to the line of the tubes.

These principles they have adhered to in all constructions. Where only slight modifications in the general design have been tested, no special cuts are given, a brief description answering every purpose. Each modification has been numbered for convenience of reference.



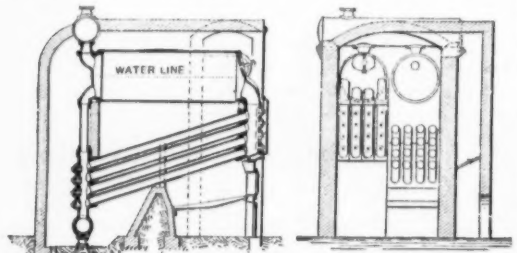
No. 1.—The original Babcock & Wilcox Boiler. The main idea was safety. To it all other elements were sacrificed wherever they conflicted. The boiler consisted of a nest of horizontal tubes serving as steam and water reservoir placed above and connected at each end by bolted joints to a nest of inclined heating tubes filled with water. Internal tubes were placed in these latter to assist circulation. The tubes were placed in vertical rows above each other, each vertical row and its connecting end forming a single casting. Hand holes were placed at the end of each tube for cleaning.

No. 2, (no cut).—The internal circulation tubes were found to hinder rather than help circulation, and were left out.

Nos. 1 and 2 were found to be faulty in both material and design, cast metal proving itself unfit for heating surfaces placed directly over the fire, cracking as soon as they became coated with scale, and unable to transmit the heat received to the water inside.

No. 3, (no cut).—Wrought iron tubes were substituted for the cast iron heating tubes, the ends being brightened and laid in the mould, the headers cast on.

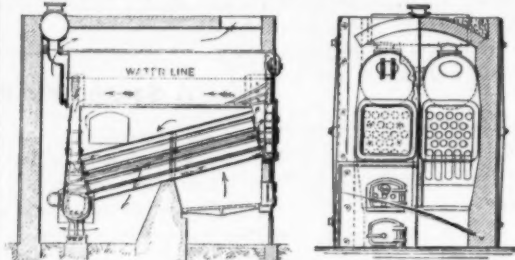
The steam and water capacity was insufficient to secure regularity of action, having no reserve upon which to draw when irregularly fed or fired. The attempt to dry the wet steam produced, by superheating in the nest of tubes which formed the steam space was found to be impracticable. The steam delivered was either wet, dry or superheated, according to the demands upon the boiler. Sediment was found to lodge in the lowest point of the boiler at the rear end, and the exposed portion of the castings cracked off when subjected to the heat.



No. 4.—A plain cylinder boiler carrying the water line at the center, leaving the upper half for steam space, was substituted for the nest of tubes. The sections were made as in No. 3, and a mud-drum added to the rear end of the sections at the lowest point farthest removed from the fire. The gases passed off to the stack at one side without coming in contact with it.

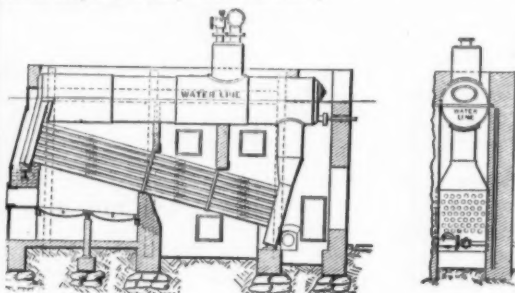
Dry steam was secured by the great increase of separating surface and steam space, and the added water capacity furnished a storage for heat to tide over the irregularities of feeding and firing. By the addition of the cylinder boiler it lost one of its elements of safety; but, on the other hand, it became a serviceable and practical design, retaining all the other elements of safety except small diameter of steam reservoir, which never exceed 36 inches in diameter, and are removed from the direct action of the furnace.

The difficulties encountered in securing reliable joints between the wrought iron tubes and the cast iron headers made a change of this detail necessary.



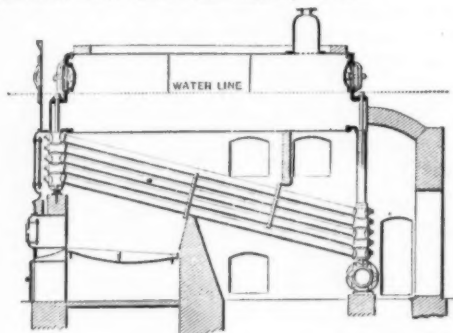
No. 5.—Wrought iron water legs were substituted for the cast iron headers, the tubes were expanded into the inside sheets, and a large cover placed opposite the front end of the tubes for cleaning.

The staggered position of tubes—one above the other—was introduced and found to be more efficient and economical than where the tubes were placed in vertical rows. In other respects it was similar to No. 4.

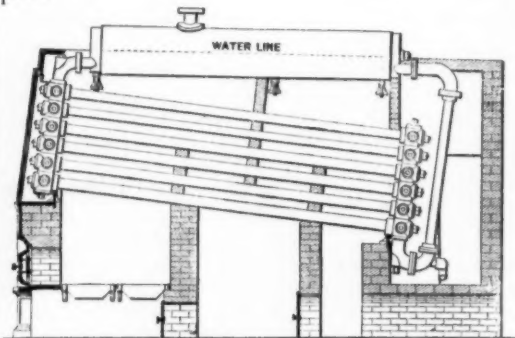


No. 6.—A modification of No. 5, in which longer tubes were used, with three passages of the gases across them, to obtain better economy.

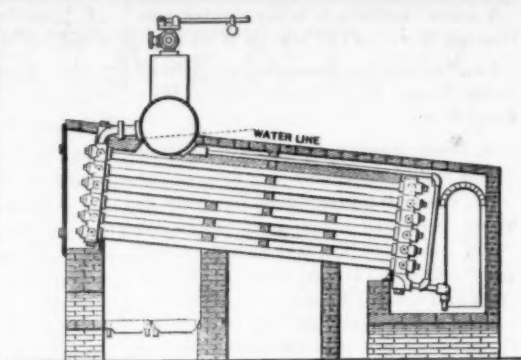
A number of this type were built, but their excessive first cost, lack of adjustability of the structure under varying temperatures, and the inconvenience of transporting the last two styles, together with the "commercial" engineering of several competing firms then in the market, who made a selling point of their ability to add power to any given boiler after it had once been erected, led to—



No. 7.—In this, separate T heads were screwed on to the end of each inclined tube; their faces milled off; the tubes placed on top of each other, metal to metal, and bolted together by long bolts passing through each vertical section of tubes and the connecting boxes on the heads of the cylinder.

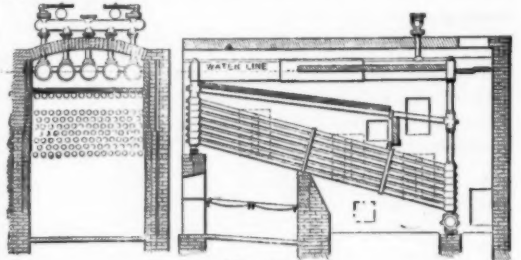


No. 8.—Experiments were made on four passages of the gases across the tubes, and the downward circulation of the water at the rear end of the boiler was carried to the bottom row of heating tubes.



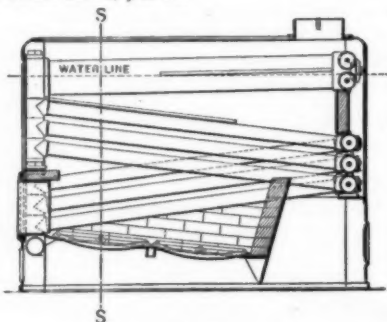
No. 9.—An attempt to reduce the amount of steam and water capacity, increase the safety and reduce the cost. A drum at right angle to the line of the tubes was tried, but found to be insufficient to secure dry steam or regularity of action.

The changes in Nos. 8 and 9 were not found to possess any advantages.



No. 10.—A move in the same direction. A nest of small horizontal drums 15 inches in diameter were used, instead of the single drums of larger diameter, a set of circulation tubes being placed at an intermediate angle between the main bank of heating tubes and the horizontal tubes which formed the steam reservoir to return the water carried up by the circulation to the rear end of the heating tubes, allowing the steam only to be delivered into the small drums above. The result was exceedingly wet steam, with no improvement in action over No. 9.

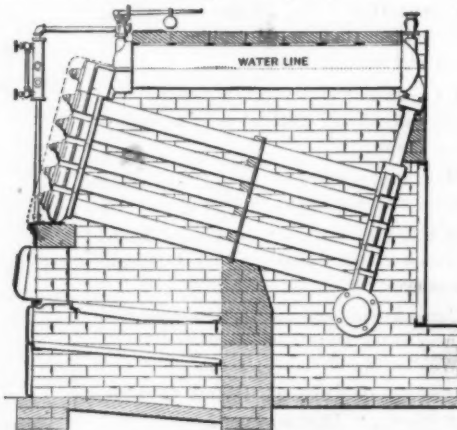
The four passages of the gases did not add to the economy in either No. 8, 9 or 10.



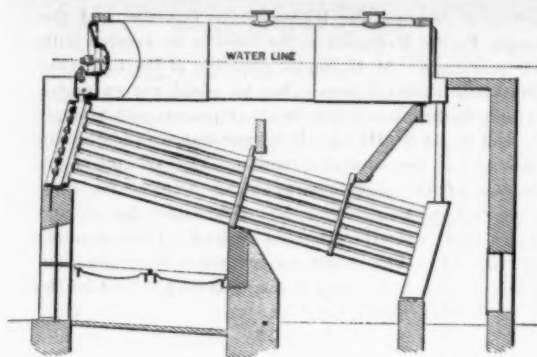
No. 11.—A trial of a box coil system, in which the water was made to traverse several times through the furnace before being delivered into the drum above.

The tendency was to form steam in the middle of the coil and blow the water out from each end, leaving the tubes practically dry until the steam found an outlet and the water returned. This boiler had a defective circulation and a decidedly geyser-like action, and produced wet steam.

All the above types, with the exception of Nos. 5 and 6, had a large number of bolted joints between their several parts, and many of them leaked seriously from unequal expansion of the parts as soon as the heating surfaces became scaled, enough boilers having been placed at work to demonstrate their unreliability in this particular.



No. 12.—Water boxes formed of cast iron of the full width and height of the bank of tubes were made of a single casting, which were bolted to the steam water-drum above.

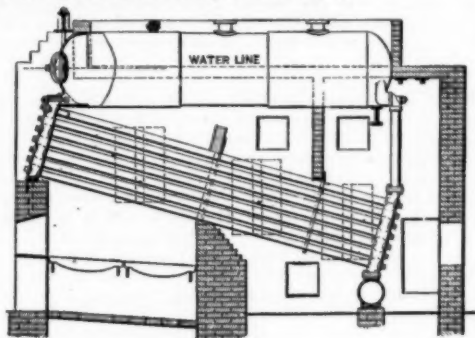


No. 13.

No. 13.—A wrought iron box was substituted for the cast iron. In this stays were necessary, and were found, as is always the case, to be an element to be avoided wherever possible.

A slanting bridge-wall underneath the drum was introduced to throw a larger portion of its surface into the first combustion chamber above the bank of tubes. This was found to be of no special benefit and difficult to keep in good order.

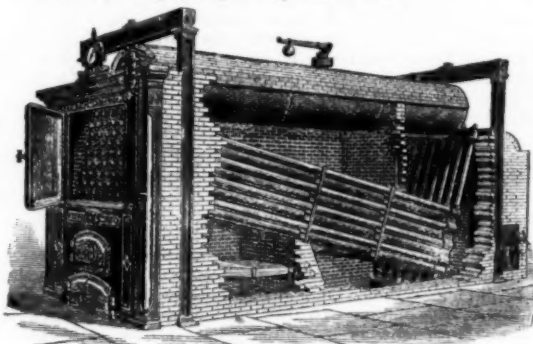
The company then made a thorough investigation of all their previous experiments, examined their boilers in use, and settled down on the style next shown.



No. 14.

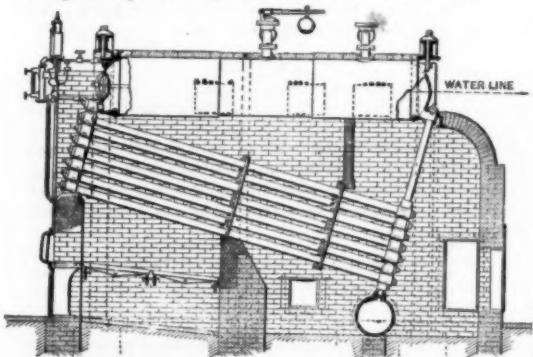
No. 14.—Each vertical row of tubes were expanded at each end into a continuous header cast of car-wheel metal, the headers having a sinuous form, so that they would lie close together and admit of a staggered position of the tubes in the furnace. Bolted joints were discarded, with the exception of those connecting the headers to the front and rear end of the drum, and the bottom of the rear headers to the mud-drum.

Even these joints were found objectionable, and were superseded in No. 15, two cuts of which are given in order to more thoroughly explain its construction.



No. 15.

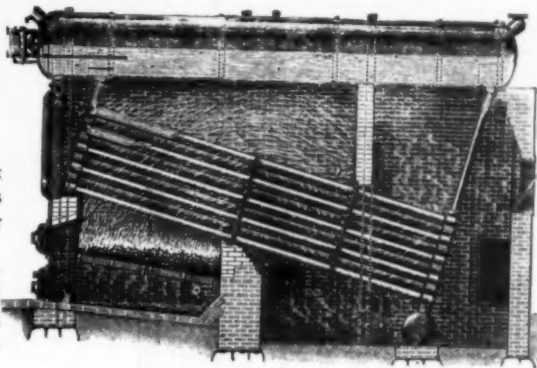
No. 15.—The general form of construction of No. 14 was adhered to, but short pieces of boiler tube were used as connections between the sections and the drum and mud-drum, their ends being expanded into adjacent parts with a Dudgeon expander, the same as the rest of the tubes.



No. 15a.

At this time an increased length was given to the tubes, bringing them up to a maximum of 18 feet, and it was found

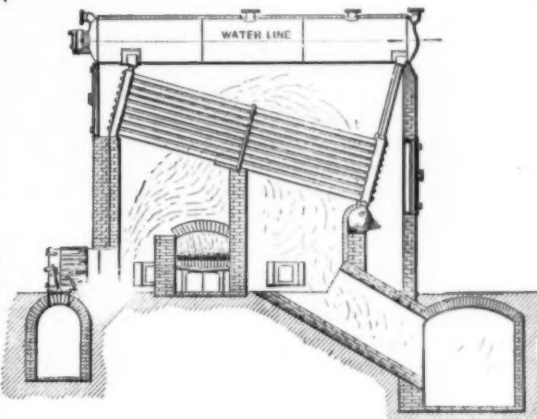
necessary to employ tubes of 4 inches in diameter, instead of the $3\frac{1}{2}$ -inch tube previously used. This boiler was also suspended entirely independent of the brick work by means of columns and girders, and the mutually deteriorating strains of the boiler and the brick work, where one was supported by the other, were avoided. A fancy cast iron front was used, and of this style a large number of horsepower have been built. It is still used where a fancy job is desired.



No. 16.

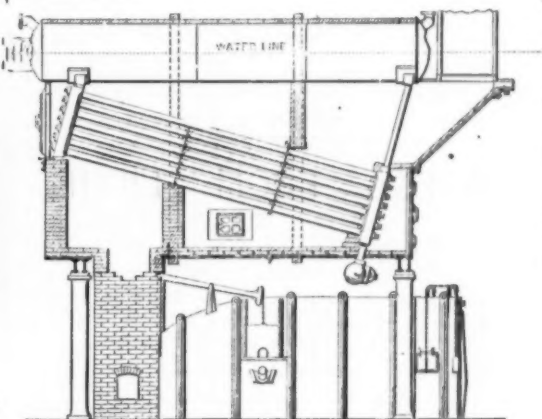
No. 16.—Flanged steel drum heads were substituted for those made of car-wheel metal; the drum is longer than the previous ones, giving greater steam and water capacity; wrought iron is substituted for cast in the fronts, to avoid cracking. This is their standard boiler for regular work.

Special settings and designs are built where special service is required.



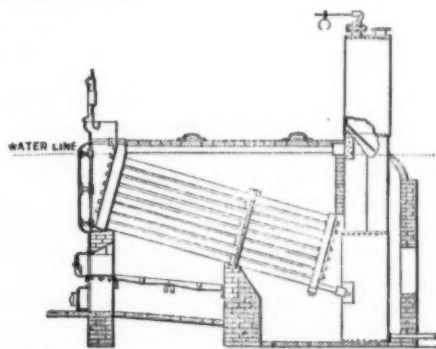
No. 17.

No. 17.—Shows the boiler as erected to fire with blast furnace gases.



No. 18.

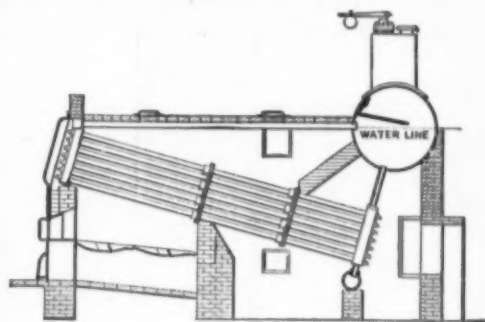
No. 18.—Erected to economize the waste heat from a puddling furnace.



No. 19.

Nos. 19 and 20.—For fire protection purposes the chief requirements are ability to raise steam quickly and hold the

pressure, economy of fuel and dryness of steam being of secondary consideration. To accomplish this a boiler with a large amount of grate and heating surface, containing a small quantity of water, is used—two very successful forms

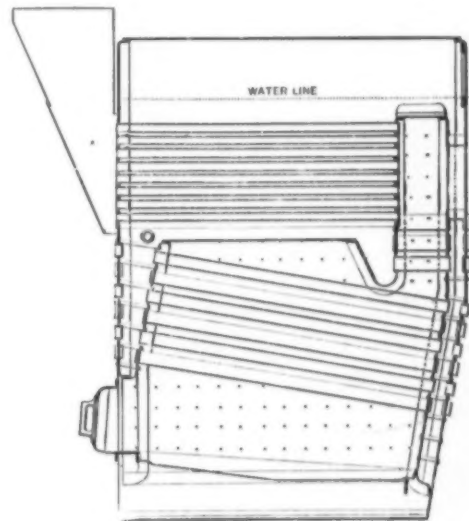


No. 20.

being shown in Nos. 19 and 20, both of which serve their special purpose admirably, but would not be either economical or desirable where steady power is required. Their small water and steam capacity demand close attention to regularity of feeding and firing, and the steam delivered is not sufficiently dry to secure the best engine economy.

MARINE BOILERS.

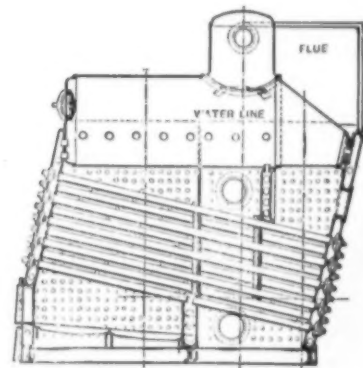
The ability to safely carry high pressures and place an equal amount of heating surface weighing 25 per cent. less into 20 per cent. less space than is required for the ordinary form of high pressure marine boilers, led to early experiments in this field.



No. 21.

No. 21.—A design similar to No. 5, the cylinder boiler being replaced by a return tubular, to increase the surface. A setting formed of stayed water sides riveted to and opening into the drum above was used.

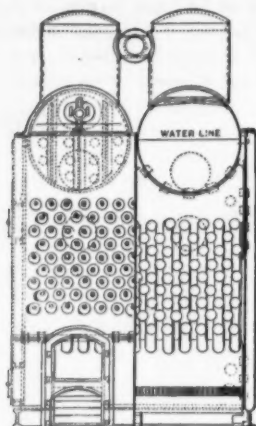
The surface added by the return tubes was not found desirable on account of the difficulties in cleaning it and their tendency to cause priming by keeping the whole disengaging surface in a state of ebullition.



No. 22.

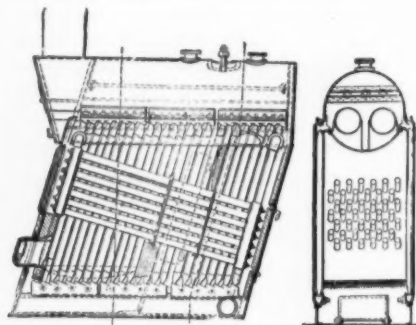
No. 22.—A larger boiler, similar in design to No. 21, having three passages of the gases across the tubes. The water sides formed in sections of water slabs, and all joints between the parts made by expanded tubes, as in No. 15. The rear end of the two cylinder boilers, forming the steam and water space, were tapered to allow the gases to pass off between them to the stack.

The stayed water sides were found to be a constant source of annoyance; the first cost was excessive; they



No. 22a.

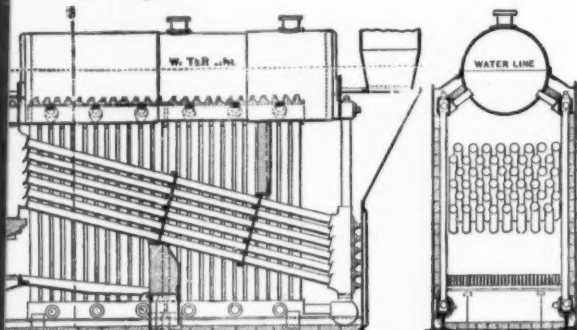
were difficult to keep clean, and were consequently abandoned in favor of walls made up of water tubes.



No. 23.

No. 23.—Similar to No. 22, but with water walls formed of nearly vertical tubes made up into sections by expanding their ends into headers, the sections being connected to each other and to the upper cylinders in turn by expanded tubes, the whole surrounded by a sheet iron jacket.

On account of the position of the hatch in the ship in which it was placed, the return flues through the drums were used to bring the gases to the forward end of the boiler again.

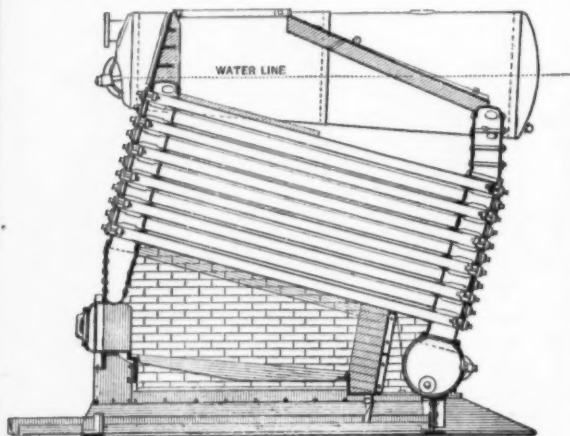


No. 24.

No. 24.—The side tubes were placed vertically and the return flues through the drum left out.

In Nos. 21, 22, 23 and 24 the delivery of the circulation from the side water walls and side tubes into the whole length of the drum on each side caused priming.

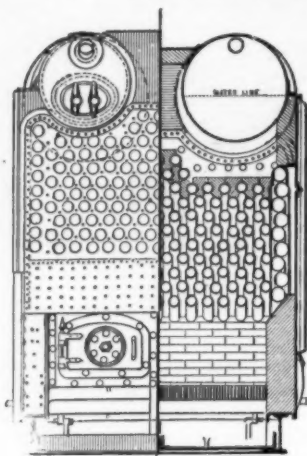
All attempts to gain economy by carrying the gases through the steam and water drum were abandoned, as it was found detrimental to the working and did not produce any better economy. The gases, after having traveled over a certain amount of water tube heating surface, were not at a sufficient temperature to warrant the use of either return flues or fire tubes.



No. 25.

No. 25.—This is the style of marine boiler finally settled upon by the Babcock & Wilcox Co. In this the side walls

are formed of a series of inclined tubes laid at the same angle as the main heating tubes. These tubes have eccentric ends of smaller diameter than the body of the tubes, to allow for metal in the tube sheets between each pair of tubes. The distance between the holes in the tube sheets are slightly less than the largest diameter of the tubes, so that by revolving them in their seats, one against the other, before expanding, a line-to-line contact is made the whole length between each two tubes, forming a practically tight water wall without stays, which is, in turn, enclosed by a sheet iron jacket caulked and made tight against air, gas and fire leaks, the small spaces not protected by the side tubes being filled in with special make of fire brick.



No. 25a.

The ends of the tubes which form the main heating surface of the boilers are made especially heavy, and are run through and expanded into both the front and rear sheets forming the water boxes, the end projecting to form the hand-hole seat for the cap which covers it. An opening is made through the top and bottom side of each tube between the front and rear sheets of the water box, to connect it with the water space. By this arrangement the use of the ordinary form of stays is done away with, the stays formed by the prolongation of the water tubes answering every purpose.

The results obtained from furnaces lined with fire brick were found to be better than where the fire was surrounded by heating surfaces.

No. 25 is designed for a tug. For large powers three passes of the gases across the tubes are used.

As to the practical working of the water-tube system as set forth above, we cannot do better than copy one paragraph from their latest circular:

"In 20 tests, during which over 3,000 tons of water were actually evaporated with a great variety of coals, the boilers exerted 34½ per cent. more than their rated power, and gave an average evaporation of 11.292 pounds of water from 212 degrees made into steam at atmospheric pressure for each pound of combustible. The average evaporation per hour per square foot of surface was 3.71 pounds of water, requiring but 8.08 square feet of heating surface per actual horse-power developed."—American Engineer.

NOTES FROM DIXIE.

BY CHAS. H. WELLS.

The Newberry, S. C., Herald gets on the war path over an item of mine which says: "It is predicted that in three more years the Columbia & Greenville Railroad will be ruined and abandoned." To this item, which it copies, the Herald says: "Without knowing anything of the inner life of the road, we feel warranted in saying that this prediction was made so as to get up a corner against it; to alarm the stockholders, and thereby depreciate the value of the property and enforce its sale at ruinous figures." Now it is quite evident the editor who got up this comment knows as little about the object and aim of the MANUFACTURERS' RECORD as he does about the railroad question. In the first place had he taken the trouble to look into his file he would have seen that in "Dixie Notes" especial attention has always been paid to the R. & D. system of roads. The prediction, which the Herald man complains of, was made by a man who is far more interested in the Columbia & Greenville Road than any man in Newberry. In order to earn expenses and pay anything the Columbia & Greenville Road must earn five cents a mile per ton on freights; upon this the prediction was based. It was not the opinion of the writer, but the opinion of a railroad man who knows more in a minute about railroad matters than the Herald man will ever know.

Just now the reshipping question is agitating Atlanta commercial circles. The merchants have selected the Louisville & Nashville, the Nashville & Chattanooga, the

Western & Atlantic, the Richmond & Danville, and the Georgia Pacific Railroads as the lines to be favored with their patronage. M. H. Smith, president of the Louisville & Nashville Railroad, stated that he could not guarantee anything further than to handle all shipments with promptness and dispatch. He said all communications addressed to him would receive prompt attention. The contents of the telegram left the impression upon the minds of the committee that the Louisville & Nashville under the circumstances could not give the relief desired. The committee had printed a circular, which was sent out to every merchant in Atlanta who had signed the agreement to stand by the action of the committee.

The circular read as follows: "We, the merchants of Atlanta, whose interests have been trampled upon, whose energies and enterprises have been hampered and embargoed, hereby bind and pledge ourselves as business men and citizens, who value the welfare and prosperity of our city, to strictly conform to such rules and regulations as the 'special committee on transportation' may adopt. And we further bind and pledge ourselves that we will patronize only such line or lines (when there is a choice) as said committee shall direct." This agreement has been signed by all the merchants in the city. When Mr. Virgil Powers, general commissioner of the Southern Railway & Steamship Association, was asked about the matter, he said: "There was no request in the communications sent to the association that needed an answer. The committee said what it was going to do, and the association decided to let it go ahead and carry out the plan that it had mapped out. In my opinion all of this matter will regulate itself in a short time, and things will return to their normal state." This looks as if there would be a fight in earnest.

Henry T. Gatchell, formerly of Atlanta, has been appointed immigration agent of the Richmond & Danville Railroad. Mr. Gatchell was one of the Georgia supervisors of the census in 1880, with headquarters in Atlanta. In his new capacity he will make his headquarters at Atlanta and will at once assume the duties of the responsible office to which he has been appointed. His duties will be to encourage immigration from all points to the territory traversed by the road. Mr. Gatchell wrote some time ago an interesting little brochure setting forth the advantages of Western North Carolina as a sanitarium, giving comparisons of temperature and other useful information. The pamphlet had wide circulation and brought many people to Asheville.

An interesting war of rates between the East Tennessee, Virginia & Georgia and the Richmond & Danville Railroads has been in progress in Atlanta. It was known that the Grant funeral would attract a good many people from the Gate City to New York. Mr. B. W. Wrenn, of the East Tennessee, Virginia & Georgia, and Mr. Mercer Slaughter, of the Richmond & Danville, were in telegraphic correspondence for two days trying to fix upon a rate. Finally Mr. Slaughter telegraphed that he found it necessary to fix the rate at \$32.50 for the round trip, to which Mr. Wrenn replied that he found it necessary to fix the price at \$25. Next day the sale of tickets began, and when the Richmond & Danville people found that the East Tennessee folks were selling at \$25, they dropped to \$24. The East Tennessee, Virginia & Georgia immediately cut a much lower figure, and, of course, secured the bulk of the travel. The Richmond & Danville stuck to \$24, but the East Tennessee, Virginia & Georgia got the Gate City Guards to go by their line, which put a big feather in their caps, as the "sojer" boys were accompanied by many friends.

North Carolina is a wonderful State! Among the minerals found in Cleveland county are iron, silver, gold, copper, tin, plumbago, corundum, tourmaline, garnet, amethyst, kaolin, and lastly and most important of all, mica, in the most wonderful profusion. But little attention as yet has been given to the mining interests of the county. The only obstacle in the way was the paramount one—a lack of capital. Mica mining has been carried on, however, since the war, with more or less profit. But until recently the veins that have been operated have not been sufficiently rich to justify hope that it would ever amount to much. Within the last month discoveries have been made which reveal the fact that in that county are some of the most valuable mica deposits in the world. Ten new mines have been uncovered recently, and one of these yields mica of wonderful size, the finest in the State, with one exception. The mica from this mine (owned by Mr. Samuel Putnam,) is of the very best quality, and some of it squares 14x20 inches. There may be a fortune in this industry for the capitalists who strike while the iron is hot.

In this same county the farmers make two crops on the same piece of land. After harvesting their wheat, they plant corn and rarely fail to gather a mature crop. There are only about ninety thousand acres of land in cultivation, and yet the value of the crop this year will reach the enormous aggregate of \$1,700,000; while the capital invested in agriculture amounts to only \$600,000. The staple crop stands about as follows:

Cotton.....	8,000,000 pounds.
Corn.....	400,000 bushels.
Wheat.....	250,000 "
Oats.....	100,000 "
Potatoes.....	75,000 "
Tobacco.....	300,000 pounds.

These calculations are carefully made from reliable estimates. I doubt whether any county in the State can make such a showing from as many acres in cultivation, and the amount of capital invested—indeed, I am convinced that the capital invested in agriculture in Cleveland county pays a greater return than in any other county in North Carolina.

OFFICE MANUFACTURERS' RECORD,)
BALTIMORE, August 12, 1885.)

The demand for pig iron is very moderate, with market quiet at former prices, viz:

Baltimore Charcoal Wheel Iron (all Baltimore ore).....	\$28	00	00
Virginia C. B. Charcoal Wheel Iron.....	28	00	00
Anthracite, No. 1.....	19	00	00
" " ".....	17	00	18
" " ".....	15	00	16
" " ".....	13	00	14

Mottled and White.....

There is a good deal of quiet inquiry and business in pig iron, notwithstanding all the unfavorable talk of extreme dullness. One broker sold 1,000 tons of No. 1 and No. 2 foundry at good prices, viz: \$15.75 for No. 2, and \$17.50 for No. 1. Very few consumers have stocks on hand, and hence there is now, in view of the nearness of September, some little stir for iron. The makers of special brands contracted for the delivery of about five thousand tons. The inquiry is particularly directed to forge iron, and the asking prices to-day are \$14.50 for Virginia; \$15@\$16 for good Pennsylvania irons. The outlook is better for business. In charcoal and Anthracite blooms very little business is reported, but the makers of muck bars manage to keep going at \$27 for good and \$26.50 for common. The merchant bar mills have not increased their orders. Common is dull at \$1.35@\$1.45. Medium at \$1.50@\$1.60, and refined at \$1.70@\$1.80. The weather is more favorable to making, and the output is considerably larger than in July. The Eastern nail makers have been selling nails for shipment West, owing to the idleness there. The plate and sheet mills East cannot be said to be making much headway, although running as usual. The bridge iron makers are picking up a good deal of business, and prices are firm. The rail makers are in session at Long Branch to see if anything can be done to restrict production. Old iron rails are \$17; steel \$15@\$16. Scrap is plenty and very little selling.

Stocks of iron and nails are steadily decreasing at no insignificant rate, judging

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Ettrick, Matoca and Battersea Mfg. Co's.,
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Rasin Fertilizing Co., Baltimore, Md.
Tanner & Delaney Engine Co., Richmond, Va.
Sibley Mills, Augusta, Ga.

Graniteville Mfg. Co., Graniteville, S. C.
Charleston Bagging Co., Charleston, S. C.
P. H. Mayo & Bros., Richmond, Va.
Phosphate Mining Co., Beaufort, S. C.
Brush Swan Electric Light Co., Norfolk, Va.
Columbus Ice & Refrigerator Co., Colum-
bus, Ga.
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Tennessee.
Vanceuse Mill, Graniteville, S. C.

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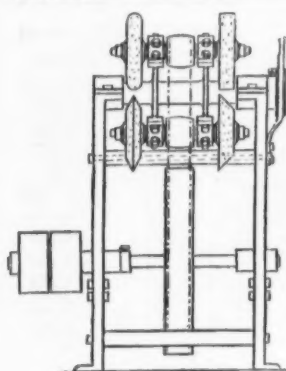
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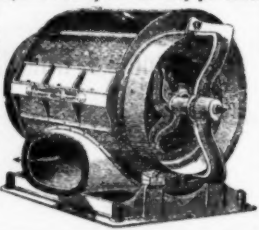
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This Cupola has made a great revolution in melting Iron. It differs from all others in having a CONTINUOUS TUYERE, or in other words, the blast enters the fuel at all points. Above one ton capacity per hour, they are made oval in form. This brings the blast to the center of the furnace with the least resistance and smallest possible amount of power, and in combination with the continuous Tuyere causes complete diffusion of the air throughout the furnace, and uniform temperature, melting ten or fifteen tons an hour with the pressure of blast required to melt two or three tons in an ordinary Cupola. It also enables us to save very largely in time and fuel, the experience of our customers showing a gain of twenty-five to fifty per cent. in time, and twenty-five to forty per cent. fuel over the ordinary Cupola, and a BETTER QUALITY OF CASTING, especially in light work.

This is due to the thorough diffusion of the air and more perfect combustion, extracting less carbon from the iron, making a softer and tougher casting. We manufacture these Cupolas of any desired capacity, numbered from 1 to 20, inclusive, the numbers indicating the melting capacities in TONS PER HOUR—No. 1, one ton; No. 2, two tons; No. 3, three tons per hour, and so on up to 15, or 20 tons. We have improved the construction of these Cupolas in every way, have increased their strength and durability, and sought to make them as convenient for working and repairs as our own and the experience of our customers could suggest.



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Sole Agent for Maryland, Virginia,
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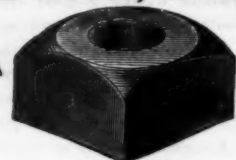
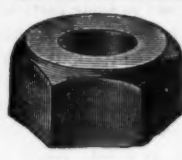
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Keep Your Steam Boilers Clean!

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SAVE YOUR FUEL!

Warner's Purifier and Heater

[PATENTED JULY 21, 1885.]

The best way to *cure* your steam boilers of incrustation and sedimentary deposit is to *keep out* of the boiler that which causes incrustation and sediment.

The chief ingredients causing sedimentary deposits and incrustation are organic matter, carbonate of lime, sulphate of lime, carbonate of magnesia, sulphate or sulphure of iron, and in salt water common salt.

The WARNER PURIFIER AND HEATER is the only machine which precipitates all impurities held in suspension, heats the water to the boiling point under full boiler pressure, separates and precipitates the mineral salts held in solution *before* the water reaches the boiler, and then injects the water *thus purified* into the boiler *boiling hot*. It is an automatic machine, entirely *outside* of the boiler, requiring absolutely no attention from the engineer except to blow off the accumulation of deposit from the bottom of the machine which acts as a mud-drum. All this is accomplished without the use of chemicals, by a purely mechanical process, regulated by the principles of natural philosophy.

No more "shutting down" of work to clean boilers—the machine does it all every day without interfering with the work, and by removing scale and preventing its formation, and heating the water to the boiling point *saves a large percentage of fuel*.

The WARNER HEATER AND PURIFIER COMPANY is now ready to furnish these machines on demand at very reasonable figures.

WASHINGTON, D. C., May 23, 1885.

This is to certify that I have made a careful examination of "Warner's Combined Purifier and Heater of Feed Water" in practical operation at the "Harris House" and "Post Building," in this city, and do not hesitate to pronounce it the *best* machine for the purpose ever invented. By its use the water goes into the boiler free from all impurities and heated to the boiling point under full boiler pressure, and as the result of the injection of pure water, the boiler is freed from scale and *kept clean*, while a large saving is made in fuel by the removal of the scale and heating the water to the boiling point *before* it enters the boiler. By the use of this machine the necessity of "shutting down" in order to blow out and clean the boiler is wholly obviated, as the impurities are all collected in the bottom of the machine, which can be blown out as many times a day as the engineer thinks proper without interfering with the workings of the boiler. I confidently commend this machine to all persons who own or use steam boilers, and am satisfied that its use will prolong the life of the boiler and make a handsome saving in the use of fuel. Very respectfully,

(Signed) JOHN H. WILKERSON,
Inspector of Steam Boilers for District of Columbia, 220 7th Street, S. E.

"HARRIS HOUSE," COR. PENNSYLVANIA AVENUE AND E STREET, N. W.

WASHINGTON, D. C., June 23, 1885.

This is to certify that one of "Warner's Purifiers and Heaters of Feed Water" has been in use on one of the boilers of the Harris House, in this city, for three months, and has proved a perfect success. The boiler upon which the machine was placed was at the time covered with a heavy scale composed of animal and vegetable matter, lime, &c., which, by the use of this machine, has been entirely removed, the boiler being now as clean as when it came from the boiler-maker. This has been entirely accomplished, without the use of chemicals, by the injection of pure water through the "Purifier and Heater." This machine injects the water into the boiler heated to the boiling point under full boiler pressure, and by this means, together with the removal of the scale, results in a large saving of fuel. It is also *invaluable* in the purification of the water for laundry purposes. The machine is self-acting, and prevents the necessity of "shutting down" in order to blow out the boiler, as the impurities are all concentrated in the bottom of the machine, and can be blown out through the machine as often during the day as the engineer may deem advisable without interfering with the working of the boiler. I am convinced that its use will prolong the life of all boilers upon which it may be placed, save a large percentage of fuel, decrease the danger of explosion, purify the water for all purposes, and give general satisfaction. I confidently commend it to all hotels using steam and to owners of steam boilers generally as a much needed improvement that will do the work claimed for it thoroughly.

(Signed) JOHN H. HARRIS, Proprietor of Harris House, Washington, D. C.

WASHINGTON "POST" BUILDING, WASHINGTON, D. C., June 23, 1885.

This is to certify that one of "Warner's Purifiers and Heaters of Feed Water" was placed upon the boiler of the Post Building about 60 days ago as a test. At that time the boiler was covered with a heavy scale of animal and vegetable matter, lime, &c., which it was impossible to prevent. By the use of this Purifier and Heater, which injects the water into the boiler free from all impurities and heated to the boiling point, the scale has been removed and the consumption of coal reduced. The machine works itself and is invaluable as a purifier of water to all branches of business requiring pure water, such as hotels, laundries, &c., and a much needed adjunct to all steam boilers, prolonging their life, decreasing the danger of explosion and effecting a large reduction in the consumption of fuel. I confidently commend Warner's Purifier and Heater to all owners of steam boilers, being confident that their interests will be subserved by its use.

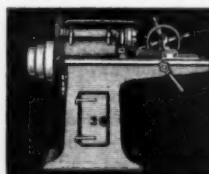
(Signed) J. FRANK MCGUIRE, Superintendent and Engineer Post Building.

ADDRESS,

Hon. JOHN F. DEZENDORF,

Room No. 35 Corcoran Building,

—WASHINGTON, D. C.—



ADAMS & PRICE MACHINERY CO.

SOLE MANUFACTURERS OF THE

NEW AND IMPROVED PRINCIPLE

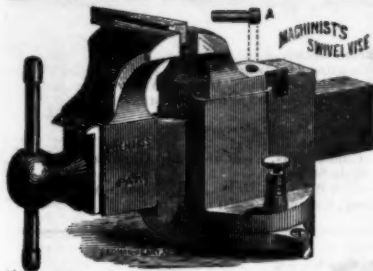
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BOLT AND NUT THREADING MACHINES

35 & 41 INDIANA ST. CHICAGO.

SEND FOR ILLUSTRATED & DESCRIPTIVE CATALOGUE

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Adjustable Jaw.
Stationary or Pat. Swivel Bottoms
CANNOT GET OUT OF ORDER.

Cheapest and Best Vises for Railroad Shops, Machinists, Manufacturers, Mechanics, &c.



"Peerless" (Swivel Jaw) Pipe Grip.
Every Part Interchangeable.
CAN BE USED ON ANY VISE.

For Sale by the Trade.

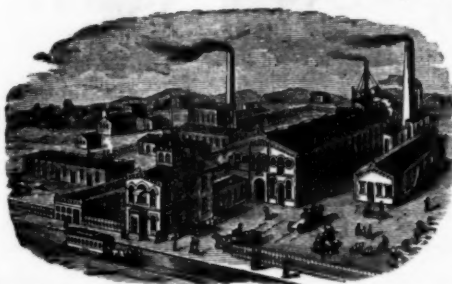
PRENTISS VISE CO., 23 Dey Street, NEW YORK, Sole Proprietors.

Ludlow Valve Manfg. Co.

Office and Works:

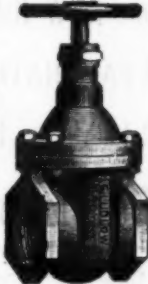
938 to 954 River Street, and 67 to 83 Vail Avenue,

—TROY, N. Y.—



VALVES

Double and Single Gate, 1/4 inch to 48 inch—outside and inside
Screws, Indicators, etc., for
Gas, Water, Steam, Oil.
Send for Circular.



Also Fire Hydrants, Yard and Wash Hydrants, Check and Foot Valves.

THE MEDART PATENT WROUGHT RIM PULLEY.

THE LIGHTEST, STRONGEST,
BEST BALANCED, AND CHEAPEST
IN THE WORLD

Whole pulleys from 9 inches to 120 inches diameter. Split pulleys from 12 inches to 120 inches diameter.
All widths of face up to 36 inches, crowning or straight, with single, double or triple sets of arms. Also tight and loose pulleys. Absolute Satisfaction Guaranteed. SHAFTHING, HANGERS, COUPLINGS, &c.

MEDART PATENT PULLEY CO.,

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STORES: 99 & 101 W. Second St., Cincinnati. 24 & 26 S. Canal St., Chicago.

THE RUTHENBURG AUTOMATIC FIRE EXTINGUISHING & ENGINEERING CO.

—OF CINCINNATI—

—OF U.S.A.—

CONTRACTORS FOR THE COMPLETE
EQUIPMENT OF FACTORIES & MILLS OF ALL KINDS

AGAINST FIRE

ABUNDANT WATER SUPPLY. NO FREEZING.
INSTANT ALARM. LOW INSURANCE.

MACHINE MOLDED

Cast Pulley Castings

Machine-molded Pulleys save from 10 to 20 per cent. in turning, balancing, and also in weight; and, being perfectly proportioned, are far stronger than hand-made PULLEYS. We have a capacity of 120 pulley castings a day, ranging from 6 inch diameter, 11 inch face, to 36 inch diameter, 24 inch face. We also keep a large assortment of Journal-box Castings, Face Couplings, Set Collars, Boiler Fronts, etc., on hand. Send for Price-Lists.

Standard Foundry Comp'y,

1240 to 1248 Collins Street, ST. LOUIS, MO.



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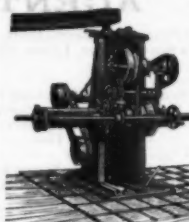
PHILADELPHIA.

IRON AND STEEL-WORKING MACHINE TOOLS

For Railways, Machine Shops and Rolling Mills.

—(ALSO)—

Shafting, Pulleys, Hangers, Couplings, &c.



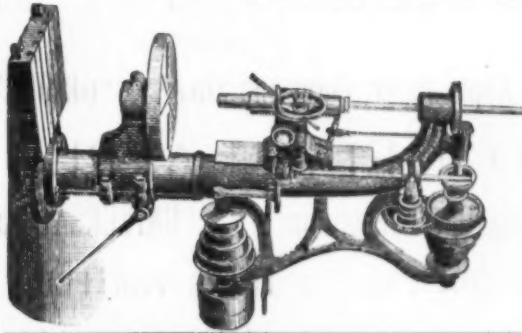
Were the first parties to design and introduce the BALL and SOCKET HANGERS, ADJUSTABLE COUPLINGS, and the system of selling Shafts Pulleys and Couplings by the piece. Will be pleased at any time to give estimates for work in place, in mills or at our works. Price-Lists and other information given when requested.

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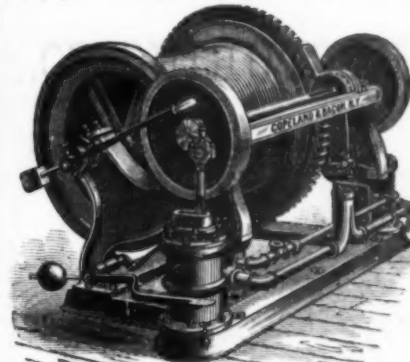
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Iron-Working
Machinery,
WORCESTER, MASS.



Special Railroad Tools, Lathes, Planers, Upright and Radial Drills, Boring Mills, Gear Cutters, Milling Machines, Patent Shafting Lathes, Hand Punches and Shears, Planer Chucks. Special machinery in great variety. Estimates furnished. Send for catalogue.



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"Mining PLANTS," Concentrating
Works and Dredging Machinery
Furnished Complete.

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REFERENCES:—Croton Magnetic Iron Mines, Brewster's, N. Y. Crown Point Iron Co., Crown Point, N. Y. Belvidere Iron Co., 52 Broadway, New York. Sea Island Chemical Co., Beaufort, S. C.

The Babcock & Wilcox Water Tube Boilers.

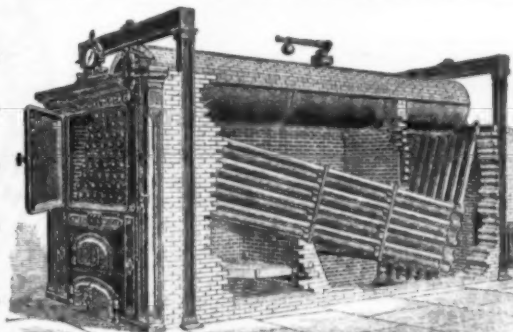
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Manufactured by the BABCOCK & WILCOX CO., 30 Cortlandt Street, NEW YORK.

THE MIDVALE STEEL CO. TIRES and AXLES

OF EVERY DESCRIPTION.

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AND
MACHINERY STEEL



SPRING AND GUN
STEEL.

CRUCIBLE AND OPEN HEARTH STEEL.

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AGENTS FOR

Buckthorn Fence Co.—Buckthorn Wire.
American Screw Co.—Screws, Rivets, Bolts, etc.
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Boss Molasses Gates.
Carr & Crawley.—Shelf and Carriage Hardware.
Lancaster Bolt Co.—Eagle Carriage Bolts.
Lawson & Brenizer.—Hay and Manure Forks.
Meriden Britannia Co.—Rogers Bros.' As Plated Goods.
Northwestern Horse Nail Co.
Nicholson File Co.
Naugatuck Cutlery Co.
Globe Horse Nail Co.

Cowles Hardware Co.—Geers, Butts, Screw Drivers, etc.
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Clark Bros. & Co.—Bolts.
Essex Horse Nails.
A. Field & Sons.—Tacks, Finishing Nails, etc.
H. C. Hart Manufacturing Co.—Spring Butts, Screen Frames, etc.
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Holroyd & Co.—Stocks and Dies.
Henry W. Kipp.—Hammers.
Klein, Logan & Co.—Picks, Mattocks, Sledges, etc.
Kimball's Patent Shovels and Spades.
Lockwood Steel Hoes.

Peck Bros. & Co.—Brass Cocks.
Payson Mfg. Co.—Building Hardware.
Patton Mfg. Co.—Enameled and Tin'd Hollow Ware.
Roy & Co.—Strap and T Hinges and Wrought Butts.
Saranac Horse Nail Co.
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Wilson's Mfg. Co.—Coffee Mills, Vises and Ship Hardware.
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International and Pimlico Brand of Horse Nails, Foreign and Domestic Hardware, Cutlery, Chains, Pistols, etc.

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THE ONLY PEACH PARER, THE BEST APPLE PARER,
MADE IN TWO SIZES: "FAMILY" AND "MAMMOTH."

—ALSO—

"IMPROVED VICTOR" Apple Parer, Corer and Slicer. "ORIOLE" Apple Parer, Corer and Slicer.

GOLD MEDAL APPLE PARER.

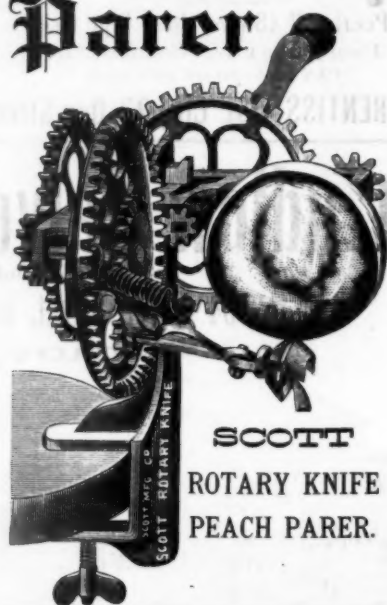
PHILIP'S Fruit and Vegetable Evaporator.

"UNIVERSAL" and "NEW IDEA" Can Openers.

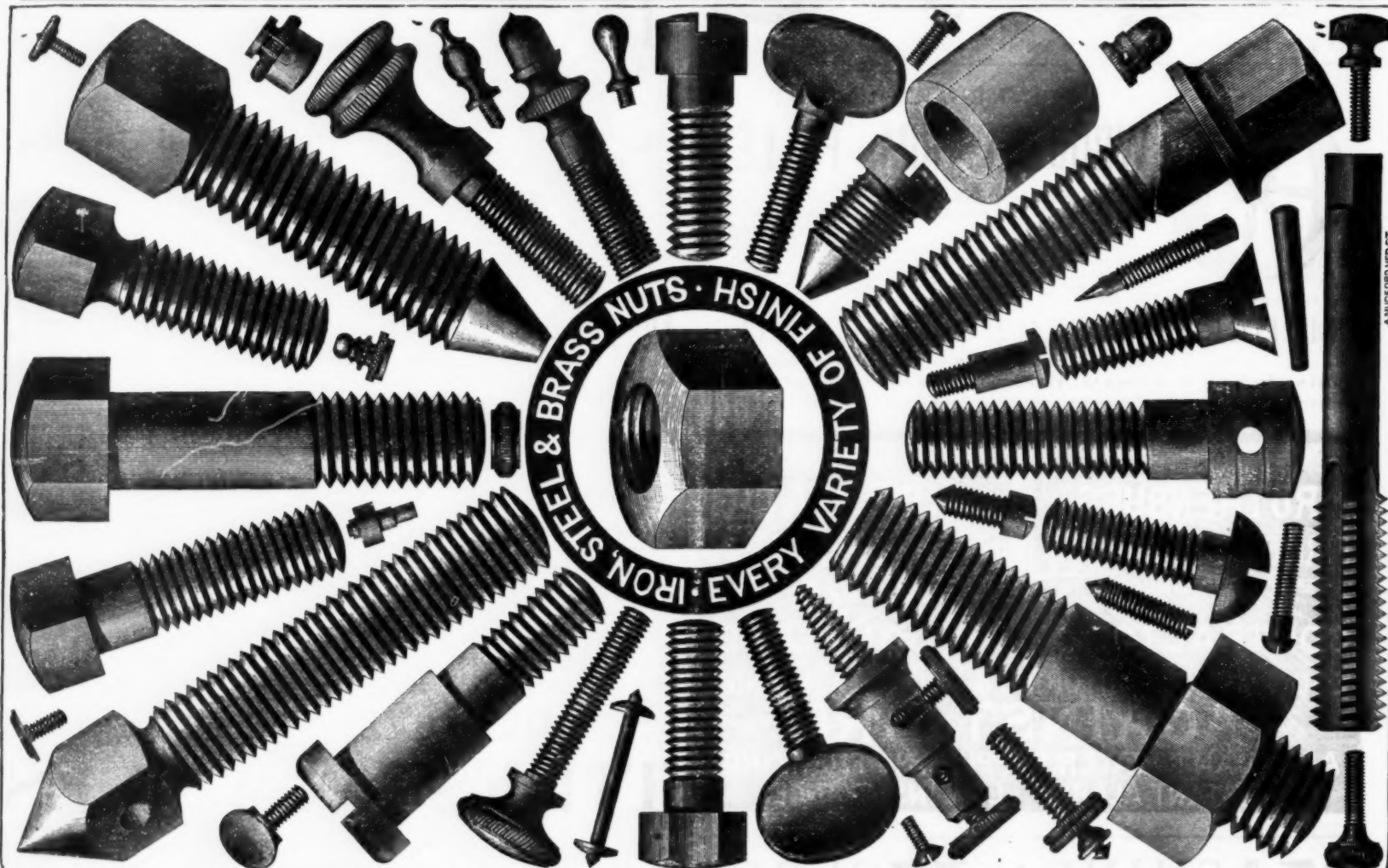
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IMPROVED 1884 HOPPER CHERRY SEEDER.

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ROTARY KNIFE
PEACH PARER.



The Hartford Machine Screw Company, Hartford, Conn.

—MANUFACTURERS OF—

Hexagon, Square, Round or Fillister Head Cap Screws, Oval Point and Cupped Point Set Screws, Collar Screws, Hanger Screws, Stud Bolts, Studs and Rolls.

Sewing Machine Screws, Gun Screws, Clock Screws and Trimmings, Piano Screws and Trimmings, Shear, Thumb and Watch Screws, Metal Dowel Pins for Pattern Work, Taper and Straight Pins of all Sizes. Taps and Reamers to match. Telegraph, Electrical and Optical Work. All kinds of Fancy Turned Metal Work. Many of the above varieties we carry in stock.

Small Screw Tools a Specialty.

Cheap Rotary Pumps for Supplying Machine Tools with Oil, Soda Water, &c.

The attention of Model Makers, Machine Builders and Buyers of Machine Screws is called to the fact that we carry in stock a great variety of Milled Machine Screws, including all Standard Sizes, with Taps to match. By Referring to our Stock, much Time and Expense may be saved. PRICES Reasonable. Send for Lists.

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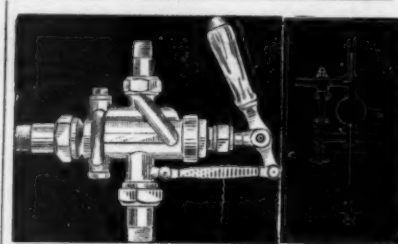
Baltimore Wholesale Prices.

ANVILS.	
Eagle and Vulcan.....	10 c. dis 20%
Wright's.....	9 1/2 c.
Armstrong's Mouse Hole.....	10 1/2 c.
Trenton.....	10 1/2 c.
Wilkinson's.....	10 1/2 c.
AUGERS AND BITS.	
Conn. Valley Mfg. Co.....	dis 60% to 100%
Douglas Mfg. Co.....	from list of
Ives.....	Jan. 7, 1880
Cook's Douglas Mfg. Co.....	dis 40% to 100%
Griswold.....	dis 50% to 100%
Patent Solid Head.....	dis 25%
Russell Jennings' Auger, Dowell, Machine.....	dis 10% to 100%
Dowel and Hand Rail Bits.....	dis 10% to 100%
Ives' "Jennings" Bits, small, 1/8", large, 3/8", dis 25%	
Expansive Bits, Clark's.....	dis 25%
Expansive Bits, Ives.....	dis 25%
Expansive Bits, Blake's.....	dis 25%
Hollow Augers, Ives.....	dis 25%
Hollow Augers, Douglas.....	dis 25%
Hol. Aug., Bonney's Adjust., 1/2 doz \$4.80, dis 25%	
Hol. Aug., Stearns' Adjust., 1/2 doz \$4.80, dis 25%	
Hol. Aug., Ives' Expansive, each \$4.50, dis 30% to 100%	
Hol. Aug., Universal Expansive, each \$4.50, dis 25%	
Wood's.....	dis 25%
Gimlet Bits.....	dis 25%
Gimlet Bits, Diamond.....	dis 25%
Double Cut Gimlet Bits, Shephard's.....	dis 25%
Double Cut Gimlet Bits, Douglas.....	dis 25%
Double Cut Gimlet Bits, Ives.....	dis 25%
Morse's Bit Stock Drill.....	dis 25%
L'Hommedieu's Ship Augers.....	dis 15%
AWL HAFES.	
Sewing Brass Ferrule.....	dis 50%
Patent Sewing, Short.....	dis 40% to 100%
Patent Sewing, Long.....	dis 40% to 100%
Patent Peg, Plain Top.....	dis 40% to 100%
Patent Peg, Leather Top.....	dis 40% to 100%
AWLS, BRAD SETS, &c.	
Awls, Sewing, Common.....	75c. to \$1
Awls, Shouldered Peg.....	75c. to \$1
Awls, Patent Peg.....	50c. to \$1.50
Awls, Shouldered Brad.....	dis 25% to 100%
Awls, Handled Brad.....	dis 25% to 100%
Brad Sets, Aiken's.....	dis 12% to 100%
Brad Sets, No. 42, 10.50; No. 43, 12.50.....	dis 70%
Brad Sets, Stanley's Exc., No. 1, 10.60, dis 30% to 100%	
Brad Sets, Stanley's Exc., No. 2, 14.80, dis 30% to 100%	
Brad Sets, Stanley's Exc., No. 3, 17.80, dis 30% to 100%	
AXES.	
Collins & Co.....	dis 25%; beveled..... \$7.75
Cohoes Mfg. Co.....	dis 25%; beveled..... \$7.75
Lippincott or Mann's.....	dis 25%
Single Bit, 1/2 to 5/8 and under.....	dis 25%
Single Bit, 1/2 to 6 and over.....	dis 25%
Double Bit, 1/2 to 5/8 and under.....	dis 25%
Double Bit, 1/2 to 6 and over.....	dis 25%
Double Bit, beveled.....	dis 25%
Second quality Axes.....	50 cts. less than above
AXLES.	
Sheldon & Co., iron.....	55% off
" " " steel.....	55% off
AXLE GREASE—Fraser's.....	10 c. 6c.
BALANCES.	
Spring Balances.....	dis 40% to 100%
BELLS.	
Hand, Light Brass.....	dis 75% to 100%
Hand, White Metal.....	dis 60%
Hand, Silver Chime.....	dis 20% to 100%
Hand, Globe (Cone's Patent).....	dis 25% to 100%
Gong, Abbe's.....	dis 20% to 100%
Gong, Yankee.....	dis 30% to 100%
Gong, Barton's.....	dis 30% to 100%
Leon Reading.....	dis 30% to 100%
Pull, Brook's.....	dis 50% to 100%
Crank, Taylor's.....	dis 25% to 100%
Lever, Sargent's.....	dis 25% to 100%
Bloomfield.....	dis 25% to 100%
Lever, R. & E. M. Co's.....	dis 25% to 100%
Call.....	dis 25% to 100%
Cow, Common Wrought.....	dis 50% to 100%
Cow, Western, Sargent's List.....	dis 50% to 100%
Cow, Kentucky, Sargent's List.....	dis 50% to 100%
Cow, Moore's or Dodge's, Genuine Ky., new list:	
Nos. 0 1 1 1/2 2 3 4 5 6 Hog (dis. 70	
\$12.00 \$10.00 \$8.00 \$7.00 \$6.00 \$5.00 \$4.00	
Cow, Texas "Star".....	dis 40%
BELLGOWS.	
Blacksmith's Common.....	dis 50%
Molder's.....	dis 25%
Hand Bellows.....	dis 25%
BLIND FASTENERS.	
Francis.....	dis 20%
Mackrell's.....	dis 20%
Van Sand's Screw Pattern.....	dis 10%
Van Sand's Old Pattern.....	dis 10%
Merriman's.....	dis 10%
Zimmerman's.....	dis 10%
BLIND STAPLES.	
Barbed, 1/2 in. and larger.....	dis 11c net
Barbed, 3/8 in.....	dis 13c net
BLOCKS.	
Penfield Block Co., Rope and Iron Strap'd.....	dis 30%
BOLTS.	
Cast Iron Barrel Shutter.....	dis 50% to 100%
Cast Iron Chain (Sargent's list).....	dis 60% to 100%
Wrought "Arrel".....	dis 50% to 100%
Wrought Square.....	dis 50% to 100%
Wrt. Shutter, All Iron, Stanley's list.....	dis 50% to 100%
Wrt. Shutter, Brass Knob, Stanley's list.....	dis 50% to 100%
Wrought Shutter, Sargent's list.....	dis 50% to 100%
Wrought Sunk Flush, Sargent's.....	dis 50% to 100%
Wrought Sunk Flush, Stanley's.....	dis 50% to 100%
Wrought B. K. Flush, Stanley's.....	dis 50% to 100%
Carriage and Tire, Common, new list.....	dis 75%
Carriage and Tire, Philadelphia Pattern.....	dis 50%
Carriage Bolts, Clarke's.....	dis 80%
Norway.....	dis 75%
R. B. & W. Carriage (old list).....	dis 65%
Tire, American Screw Co's.....	dis 80%
Tire, "Bay State".....	dis 80%
Eagle Philadelphia Tire Bolt.....	dis 80%
Stove.....	dis 70%
Flow.....	dis 60% to 100%
Machine.....	dis 75%
Bolt Ends and Lag Screws.....	dis 75%
BOLTS.	
Q. S. Hackus.....	dis 50%
Barber's.....	dis 40% to 100%
Spofford's Patent.....	dis 50% to 100%
Ive's Patent Braces.....	dis 50%
Common Bolt (American).....	dis 55%
Amidon's.....	dis 50%
BORING MACHINES—WITHOUT AUGERS.	
Sweet & Clark upright, 3.60 angular.....	dis 40% to 100%
Lawrence.....	dis 30% to 100%
Hubbard.....	dis 30% to 100%
Phillips, with Augers.....	dis 70% to 100%
BRACKETS.	
Shelf, plain.....	dis 50% to 100%
Shelf, fancy.....	dis 55% to 100%

BRIGHT WIRE GOODS.	
New list.....	dis 70% to 100%
BULL RINGS.	
Union Nut Co.....	dis 55%
Sargent's.....	dis 60% to 100%
Humason, Beckley & Co's.....	dis 60% to 100%
BUTTS.	
Wrought Brass.....	dis 75%
Cast Brass, Fast Joint.....	dis 10% to 100%
Cast Brass, Loose Joint.....	dis 10% to 100%
Fast Joint, Narrow.....	dis 60% to 100%
Fast Joint, Broad.....	dis 60% to 100%
Loose Joint, Japanned.....	dis 70% to 100%
Loose Joint, Jap, with Acorns.....	dis 70% to 100%
Parliament Butts.....	dis 70% to 100%
Mayer's Hinges.....	dis 70% to 100%
Loose Pin, no Acorn.....	dis 70% to 100%
Loose Pin, Acorns.....	dis 70% to 100%
Loose Pin, Acorns, Japanned.....	dis 70% to 100%
Loose Pin, Acorns, Jap'd, Plated.....	dis 70% to 100%
Wrought Iron.	
Fast Joint, Narrow.....	dis 60% to 100%
Fast Joint, L. Narrow.....	dis 60% to 100%
Fast Joint, Broad.....	dis 60% to 100%
Loose Joint, Broad.....	dis 60% to 100%
Table Butts, Back Flaps, &c.....	dis 60% to 100%
Inside Blind, Regular.....	dis 60% to 100%
Inside Blind, Light.....	dis 60% to 100%
Loose Pin, Wrt.....	dis 60% to 100%
Loose Pin, Light.....	dis 60% to 100%
Geer's Spring and Blank Butts.....	dis 25%
Hart Manufacturing Co.....	dis 60% to 100%
American Spring Hinge Co's.....	dis 25%
Gem Spring Hinges.....	dis 25%
Blind Butts, Shepard's, Nos. 50 and 60.....	dis 70%
Blind Butts, Shepard's, No. 50.....	dis 70%
Blind Butts, Shepard's, No. 75.....	dis 70%
Blind Butts, Lull & Porter.....	dis 75%
Blind Butts, Huffer.....	dis 50%
Blind Butts, Clark's, No. 1, 3, 5.....	dis 70%
Standard Lull & Porter.....	dis 75%
BOW PINS.	
Humason, Beckley & Co's.....	dis 55% to 100%
Sargent & Co's.....	dis 55% to 100%
Hotchkiss.....	dis 25%
BUTCHER'S CLAYERS.	
Humason & Beckley Mfg. Co.....	dis 25%
Bradley's.....	dis 25%
Beatty's.....	dis 25%
1 2 3 4 5 6 7 8	
\$16.50 19.00 21.50 24.00 27.00 30.00 33.50 36.50	
CAN OPENERS.	
American.....	dis 75%
New Idea.....	dis 75%
No. 4, French.....	dis 75%
No. 5, Iron Handle.....	dis 75%
Sardine Scissors.....	dis 75%
Sprague, No. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100	
Universal.....	dis 33%
CAPS, PERCUSSION, &c.	
U. M. C., F. C. trimmed.....	dis 10% to 100%
U. M. C., F. L. ground.....	dis 10% to 100%
U. M. C., Cen. fire ground.....	dis 10% to 100%
U. M. C., Double W. Proof.....	dis 10% to 100%
G. D. & S. R.....	dis 10% to 100%
E. B. & S. R.....	dis 10% to 100%
Musket, in 1-10's.....	dis 10% to 100%
Hicks Ground Edge in Boxes.....	dis 10% to 100%
CARTRIDGES.	
Rim.....	dis 60%
Central Fire, pistol size.....	dis 40%
" " Military.....	dis 25%
B. B. Caps, Round Ball.....	dis 1.60
" Swaged Conical.....	dis 1.75
NEW LIST ON CARTRIDGES.	
Rim-fire, 22 short.....	dis 6.00
" 32 ".....	dis 15.50
" 38 ".....	dis 18.00
" 41 ".....	dis 17.50
Central Fire—32, 11.00; 38, 13.50; 41, 15.00; 44, 17.00	
CARDS.	
Horse and Curry, new list, July, 1881.....	dis 10%
Cotton, new list, July, 1881.....	dis 10%
Wool, new list, July, 1881.....	dis 10%
CANE STRETCHERS.	
Cast Steel, Polished.....	dis 30%
Cast Iron, Steel Points.....	dis 30%
Bullard's.....	dis 25%
CASTERS.	
Red.....	dis 60%
Plate and Shallow Socket.....	dis 60%
Deep Socket.....	dis 25% to 100%
Martin's Patent (Phoenix).....	dis 25%
CATTLÉ LEADERS.	
Humason, Beckley & Co's.....	dis 60% to 100%
Sargent's.....	dis 60% to 100%
P. S. & W.....	dis 25% to 100%
CHAIN.	
German Halter and coil Chain.....	dis 50% to 100%
Trace, Breast and Fancy.....	dis 45%
Oneida Halter Chain (old list).....	dis 45%
Galvanized Pump Chain.....	dis 45%
Jack Chain, iron.....	dis 60% to 100%
Jack Chain, Brass.....	dis 50% to 100%
CHALK.	
White.....	dis 60% to 100%
Red.....	dis 60% to 100%
Blue.....	dis 60% to 100%
White Crayons.....	dis 60% to 100%
COTTON LINES.	
Cotton Fish Lines.....	dis 33%
Cotton Chalk Lines.....	dis 33%
Nos. 11, 13, 15, 17, 19, 20, 22, 24, 26, 28, 30, 32, 34, 36, 38, 40, 42, 44, 46, 48, 50, 52, 54, 56, 58, 60, 62, 64, 66, 68, 70, 72, 74, 76, 78, 80, 82, 84, 86, 88, 90, 92, 94, 96, 98, 100	
3.00 3.50 4.00 4.50 5.00 5.50 6.00 6.50 7.00 7.50 8.00 8.50 9.00 9.50 10.00 10.50 11.00 11.50 12.00 12.50 13.00 13.50 14.00 14.50 15.00 15.50 16.00 16.50 17.00 17.50 18.00 18.50 19.00 19.50 20.00 20.50 21.00 21.50 22.00 22.50 23.00 23.50 24.00 24.50 25.00 25.50 26.00 26.50 27.00 27.50 28.00 28.50 29.00 29.50 30.00 30.50 31.00 31.50 32.00 32.50 33.00 33.50 34.00 34.50 35.00 35.50 36.00 36.50 37.00 37.50 38.00 38.50 39.00 39.50 40.00 40.50 41.00 41.50 42.00 42.50 43.00 43.50 44.00 44.50 45.00 45.50 46.00 46.50 47.00 47.50 48.00 48.50 49.00 49.50 50.00 50.50 51.00 51.50 52.00 52.50 53.00 53.50 54.00 54.50 55.00 55.50 56.00 56.50 57.00 57.50 58.00 58.50 59.00 59.50 60.00 60.50 61.00 61.50 62.00 62.50 63.00 63.50 64.00 64.50 65.00 65.50 66.00 66.50 67.00 67.50 68.00 68.50 69.00 69.50 70.00 70.50 71.00 71.50 72.00 72.50 73.00 73.50 74.00 74.50 75.00 75.50 76.00 76.50 77.00 77.50 78.00 78.50 79.00 79.50 80.00 80.50 81.00 81.50 82.00 82.50 83.00 83.50 84.00 84.50 85.00 85.50 86.00 86.50 87.00 87.50 88.00 88.50 89.00 89.50 90.00 90.50 91.00 91.50 92.00 92.50 93.00 93.50 94.00 94.50 95.00 95.50 96.00 96.50 97.00 97.50 98.00 98.50 99.00 99.50 100.00	
CHISELS.	
Socket Framing, Crossman.....	dis 60% to 100%
Socket Framing, P. S. & W.....	dis 70% to 100%
Socket Framing, Douglas.....	dis 75%
Socket Framing, Crossman.....	dis 65%
Socket Framing, Ohio Tool Co.....	dis 60% to 100%
Socket Framing, Douglas.....	dis 70% to 100%
Socket Corner.....	dis 70% to 100%
Tanged Firmers.....	dis 40% to 100%
Tanged Firmers, Butcher's.....	dis 40% to 100%
I. Merrill's Socket and Framing Chisel.....	dis 65% to 100%
CLAMPS.	
Iron, Screw, Eagle.....	dis 50%
Iron, Adjustable, Stearns.....	dis 20% to 100%
Iron, Cabinet, Sargent's.....	dis 65% to 100%
Iron, Carriage maker's, Carr & Crawley.....	dis 25%
CLIPS, AXLE.	
Norway or Best.....	dis 60% to 100%
Superior.....	dis 45%
Conestoga.....	dis 60% to 100%
Coal Hods—Griffiths.....	dis 40%
COCKS, BRASS.	
Racking, new list, July 10, 1880.....	dis 60% to 100%
Globe, new list, July 10, 1880.....	dis 60% to 100%
Plain Bibbs, new list, July 10, 1880.....	dis 60% to 100%
Ale and Beer, new list, July 10, 1880.....	dis 60% to 100%
COFFEE MILLS.	
Parker's.....	dis 45%
Wilson's.....	dis 40% to 100%
Logan & Strobbridge.....	dis 45%
Enterprise Mfg. Co.....	dis 25%
COMPASSES, DIVIDERS, &c.	
Compasses.....	dis 60% to 100%
Calipers.....	dis 60% to 100%
Dividers.....	dis 60% to 100%
Cook's Pencil.....	dis 10% to 100%

COFFERS TOOLS.		
Bradley's.....	dis 15	to 100
Barton's.....	dis 20	
CROW BARS.		
Cast Steel.....	dis 60	
Iron, Steel Points.....	dis 40	
CURLING IRONS, &c.		
1/2, 3/4, 1 in., \$1.80, 2.00, 2.50.....	dis 10	
Curling Tongs.....	dis 36.65	dis 10
Pinching Irons.....	dis 75.50	dis 20
CURRY COMBS.		
Fitch's new list.....	dis 50	
Hotchkiss, Novelty, new list, July, 1880.....	dis 25	
Hotchkiss, Excelsior Superior Champion.....	dis 25	
Lawrence, "Perfect".....	dis 25	to 10
Rubber.....	dis 25	
Sweet & Clarke.....	dis 50	
Lusters.....	dis 25	
CURTAIN PINS.		
Silvered Glass.....	dis 25	
White Enamel.....	dis 25	
CUTLERY.		
Association (Table).....	dis 25	
Naugatuck Cutlery Co.....	dis 25	
Excelsior Knife Co.....	dis 25	
Wilson's Butcher and Shoe Knives.....	dis 30	
Amer' Shoe Knives.....	dis 15	
Wm. Rogers Knife Co.....	dis 25	
DOG COLLARS.		
Embossed Gilt.....	dis 20	
Leather.....	dis 25	
Brass.....	dis 25	
DOOR SPRINGS.		
Torrey's Rod, regular size, 1/2 doz., \$3.....	dis 40	to 10
Gem (Coil).....	dis 40	
No. 1, Large Japanned.....	dis 40	
No. 2, Medium Japanned.....	dis 40	
No. 3, Small Japanned.....	dis 40	
No. 4, "Shoo Fly" Screen door size, 1.50		
No. 5, Screen door size.....	dis 50	
No. 6, Medium.....	dis 75	
No. 7, Large.....	dis 100	
Standard—10 doz \$1.25; 9 doz \$1.75.....	dis 60	to 10
8 doz 1.50; 6 doz \$3.50.....	dis 60	to 10
DRAWING KNIVES.		
Hercules.....	dis 60	to 10
Ohio Tool Co.....	dis 60	to 10
Crossman's No. 1.....	dis 58	to 10
Nobles Mfg. Co.....	dis 15	
Bradley's.....	dis 35	
Adjustable Handle.....	dis 20	
P. S. & W.....	dis 70	to 10
Douglass.....	dis 75	
DRILLS AND DRILL STOCKS.		
Blacksmiths.....	each, \$2.50	dis 10
Blacksmiths' Self-Feeding.....	each, 7.50	dis 20
Breast, P. S. & W.....	dis 20	to 10
Breast, Wilson's.....	dis 20	
Breast, Millers Falls.....	each, \$3.00	dis 25
Breast, Bartholomew's.....	each, \$2.50	dis 25
Wilson's Drill Stocks.....	dis 10	
Automatic Boring Tools.....	each, \$2.25	dis 20
EGG BEATERS.		
Dover.....	dis 20	
Medallion.....	dis 100	
Victoria.....	dis 100	
EMERY AND EMERY PAPER.		
Regular numbers.....	dis 10	
Flour and F. F.....	dis 10	
B. & A. Emery Paper.....	dis 30	to 10
ENAMELED AND TINNED WARE.		
Kettles.....	dis 60	to 10
Sauce Pans.....	dis 45	
Tinned Sauce Pans.....	dis 45	
Escutcheon Pins—Brass.....	dis 50	
ESCUTCHEONS.		
Door Lock.....	Same discounts as Door Lock	
Brass Thread.....	dis 25	
Wood.....	dis 25	
FAUCETS.		
Fenn's.....	dis 40	
Fenn's Cork Stops.....	dis 33 1/2	
Star.....	dis 55	to 10
Frary's Patent Petroleum.....	dis 20	to 10
West's Patent Key.....	dis 45	
Anchor Lock.....	dis 45	
Metallic Key, Leather Lined.....	dis 60	
Cork Lined.....	dis 70	
J. Sommer's Best Metallic Key.....	dis 40	
J. Sommer's Cork Lined, 1st quality.....	dis 50	
FILES.		
E. M. Boynton's.....	new list, dis 25	
Western File Co.....	dis 45	
Butcher's.....	dis 40	
Moss & Gamble.....	dis 40	
H. Diston & Sons (new list).....	dis 40	
Heller Bros' Horse Rasps.....	dis 30	to 10
Nicholson.....	dis 50	to 10
New American.....	dis 50	to 10
Union File Co.....	dis 45	
Stubbs, new list.....	dis 75	to 10
FLUTING MACHINES.		
Knox, 1/4-inch Rolls.....	\$3.50 each	dis 35
Knox, 6-inch Rolls.....	\$4.00 each	dis 35
Knox, 8-inch.....	dis 60	
Eagle, 3/4-inch Roll.....	dis 35	
Eagle, 5/4-inch Roll.....	dis 35	
Crown, 1/4-inch, \$3.50; 6, \$4.00; 8, \$6.50 each.....	dis 35	
Crown Jewell.....	dis 35	
American, 5-in., \$3.60; 6-in., \$3.40; 7-in., \$4.50 each.....	dis 35	
Domestic Fluter.....	dis 10	
Geneva Hand Fluter, White Metal, 1/2 doz \$12.25		
Crown Hand Fluter, Nos. 1, \$12.50; 2, \$12.50;		
3, \$10.50; 4, \$8.25		
Combined Fluter and.....	dis 15	
POKES.		
Lawson & Brenner.....	dis 50	to 10
Remington.....	dis 50	to 10
Sheble & Fisher.....	dis 50	to 10
FRY PANS.		
Burnished list as follows.....	dis 60	to 10
No.....	1 2 3 4 5 6 7 8	
1/2 doz.....	\$3.00 3.75 4.25 4.70 5.25 6.00 7.00 8.00	
GAUGES.		
Marking, Stanley's.....	dis 50	to 10
Marking, Chapin's.....	dis 55	to 10
Wire.....	dis 10	to 10
Wire, Diston's.....	dis 20	
Wire, Wheeler, Madden & Co.....	dis 10	
GIMLETS.		
Nail and Spike.....	dis 40	
"Eureka" Gimlets.....	dis 50	
"Diamond" Gimlets.....	dis 50	
Double Cut, Shepardson's.....	dis 50	
Double Cut, Hartwell's.....	dis 50	
Double Cut, Ives.....	dis 50	
Double Cut, Douglass.....	dis 33 1/2	
"Reel".....	dis 25	
GLUE POTS.		
Tinned and Enameled.....	dis 40	
Family, Howe's "Eureka".....	dis 25	
Family, L. F. & C.'s "Handy".....	dis 30	
GRINDSTONE FIXTURES.		
Sargent's Patent.....	dis 70	to 10
Reading Hardware Co.....	dis 25	to 10
GUN WADS.		
Eley's B. E. wads, 11 upwards.....	dis 75	
9 and 10.....	dis 25	
7 " 8.....	dis 25	
" P. E. " 11 upwards.....	dis 25	
9 and 10.....	dis 35	
7 " 8.....	dis 44 1/2	
HAMMERS.		
Maydole's.....	dis 15	
Hartford Hammer Co.....	dis 25	

SILVER PLATED HOLLOW WARE.	
Wm. Rogers Manf. Co.	dis 40, 158 1/2
Meriden Britannia Co.	dis 33 1/2
SPOONS.	
Britannia.	dis 60 1/2
Tinned Iron, Table and Tea.	dis 65
Tinned Iron Basting.	dis 65
German Silver.	dis 40 1/2
STONE.	
Hindustan No. 1, 3c; Axe, 8c.	net
Sand Stone.	No. 1, 1b, 6c, dis 33 1/2
Washita Stone.	No. 1, 1b, 16c, net
Washita Stone, Slips.	No. 1, 1b, 45c, net
Arkansas.	\$1.50 1b, net
SQUARES.	
Steel.	dis 50 1/2; full cases, dis 50 1/2
Iron.	dis 50 1/2; full cases, dis 50 1/2
Nickel Plated.	add \$2.50 1/2 doz net.
Try Square and T Bevels.	dis 50 1/2
Diston's Try Square and T Bevels.	dis 40 1/2
TACKS, BRADS, &c.	
American Iron Carpet Tacks, all kinds.	65
Steel Carpet Tacks, all kinds.	60
Swedes Iron Carpet Tacks, all kinds.	60
Swedes Iron Upholsterers' Tacks.	60
Tinned Swedes Iron Tacks.	60
Tinned Swedes Iron Upholsterers' Tacks.	60
American Iron Cut Tacks.	60
Gimp and Lace Tacks.	60
Tinned Gimp and Lace Tacks.	60
Copper Tacks.	55
Copper Finishing and Trunk Nails.	55
Cigar Box Nails.	50
Finishing Nails.	50
Zinc Glaziers' Points.	50
Common and Patent Brads.	50
Hungarian Nails and Miners' Tacks.	45
Trunk and Clout Nails.	40
Tinned Trunk and Clout Nails.	40
Basket Nails.	40
Chair Nails.	40
Tinned Capped Trunk Nails.	30
Looking-glass Tacks.	30
Picture Frame Points.	30
Leathered Carpet Tacks.	30
Brush Tacks.	30
TAP BORERS.	
Common and Ring.	dis 20 1/2
Ives' Tap Borers.	dis 15 1/2
Enterprise Mfg. Co.	dis 25 1/2
TOBACCO CUTTERS.	
Enterprise Mfg. Co (Champion).	dis 25 1/2
Wood Bottom.	1/2 doz \$12.00, dis 40 1/2
All Iron.	1/2 doz \$9.50, dis 40 1/2
Wilson's.	dis 35 1/2
THERMOMETERS.	
Tin Case.	dis 75 1/2
Storm Glasses.	\$3.25 1/2 doz.
TOE CALKS.	
Winsted.	1/2 doz 9c, dis 5 1/2
TRAPS.	
Game, Newhouse.	dis 35 1/2
Game, Obedia Pattern.	dis 60 1/2
Game, Blake's Patent.	dis 40 1/2
Game, Wood, Choker.	1/2 doz holes, 16c
Mouse, Round Wire.	1/2 doz \$1.50, dis 10 1/2
Mouse, Cage, Wire.	1/2 doz \$2.50, dis 10 1/2
Mouse, Catch-em-alive.	1/2 doz \$2.50, dis 10 1/2
Cyclon Mouse.	1/2 doz 75 cts.
Ideal Mouse.	1/2 doz \$1.00
Rat, "Decoy"	1/2 doz \$10.00, dis 10 1/2
Delusion Mouse, per doz.	\$1.50
TROWELS.	
Lathrops' Brick and Plastering.	dis 25 1/2
Reed's Brick and Plastering.	dis 15 1/2
Diston's Brick and Plastering.	dis 20 1/2
Clement & Maynard's.	dis 20 1/2
Vorrall's Brick.	dis 20 1/2
Grades & Walby's.	dis 20 1/2
Garden.	dis 55 1/2
TRUCKS (WAREHOUSE, &c.)	
Handy Truck.	\$2.50 net
Penfield Block Co. list, 1889.	dis 35 1/2
Peerless, with Cogs, No. 3.	\$4.00
Peerless, with Cogs, No. 4.	\$6.00
Eureka, No. 2.	1/2 doz 42.00
VISES.	
Cheney's Combined Vise and Anvil.	dis 25 1/2
Solid Box—Wilson's.	dis 50 1/2
"Trenton.	dis 45 1/2
"Iron City Tool Works.	dis 50 1/2
"Trenton.	dis 45 1/2
"Parker's.	dis 25 1/2
"Prentiss.	dis 25 1/2
"Boney's.	dis 35 1/2
"Well Whuey's.	dis 60 1/2
WIRE.	
Brass and Copper, list of Jan. 17, 1884.	dis 15 1/2
right and Annealed.	Nos. 10, 18, dis 50 1/2
right and Annealed.	Nos. 10, 18, dis 60 1/2
right and Annealed.	Nos. 27, 36, dis 70 1/2
galvanized.	Nos. 10, 18, dis 50 1/2
galvanized.	Market list dis 40 1/2
inned, Nos. 0 to 18.	dis 60 1/2
inned Broom Wire, Nos. 18 to 25.	dis 60 1/2
nealed Fence, Nos. 8 & 9.	dis 55 1/2
nealed Grape, Nos. 10 to 14.	dis 50 1/2
nealed Staples, galvanized.	1/2 doz 70 1/2 c
galvanized Fence.	1/2 doz 60 1/2 c
galvanized Barbed Fence.	1/2 doz 5 1/2 c
nick Thorn Galvanized.	1/2 doz 60 1/2 c
cloth Wire.	dis 40 1/2
clothes Line Wire, Galvanized.	\$3.75 1/2 doz
ire Cloth, green, drab and black.	1/2 sq ft 2 c net
WRENCHES.	
American Adjustable.	dis 45 1/2
uxter's Adjustable "S" list Jan., 1880.	dis 20 1/2
uxter's Diagonal.	dis 20 1/2
uxes' Genuine.	dis 60 1/2
uxes' "Mechanics."	dis 60 1/2
uxes' Pattern, Malleable.	dis 75 1/2
uxes' Pattern, Wrought.	dis 60 1/2
ard Standard.	dis 60 1/2
ard Agl.	dis 60 1/2
ways Ready.	\$9.00—25 1/2
WRINGERS.	
Universal, XX, No. 1.	33.00
Universal, XX, No. 2.	42.00
Universal, XX, No. 1 1/2.	51.00
Universal, XX, No. 1.	66.00
Universal, XX, No. 8.	each 10.75
Universal, XX, No. 12.	each 20.25
Universal, XX, No. 18.	each 22.75
Universal, XX, No. 22.	each 30.75
erless, No. 1.	42.00
erless, with Cogs, No. 1.	45.00
erless, with Cogs, No. 2.	48.00
MISCELLANEOUS.	
Diamond Vegetable Grater.	\$5.00 1/2 doz., 10 1/2 doz
ony Knife Potato Parer.	\$5.00 1/2 doz., 10 1/2 doz
italic Shingles.	\$5.50 and \$6.50 per square.
pper Cherry Seeders.	\$5.00 1/2 doz, net



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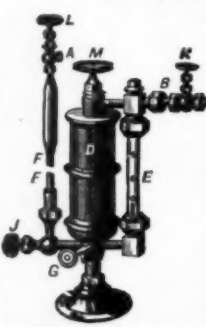
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Middle Cave, North Carolina.

Reference—E. M. Davis, Philadelphia, Pa.

FOR SALE.

A Portable 20 Horse-Power Engine and Saw Mill, with large lot of timber, if desired within 6 miles of Farmville, and 3 from railroad. Also one 8 Horse-Power Portable Engine, on skids, Horizontal Boiler, Talbot's make. It is now mounted on truck and used for threshing wheat. Address

FARMVILLE MANUFACTURING CO.,
Farmville, Virginia.

Cotton Bating Machinery FOR SALE.

8 3/4-inch Roller Bating Caris, with Lapper, Press and Grinder. All complete and in good order. Address

COLLINS ARNOLD,
Machinery Agent, 415 River Street,
TROY, N. Y.

FOR SALE.

A saw and planing mill, sash, door, blind and handle machinery, with ample power, all complete and as good as new. About 300,000 feet of dry cypress, poplar and other lumber on yard; lots plentiful and cheap; located in a pleasant and healthy town of over 5,000 population, on river and railroad. Arrangements can be made for long time payment for a good portion of purchase money. A bargain. Address A. M. Lewin, Columbus, Miss.

FOR SALE.

A Cotton Seed Oil Mill situated in the heart of the cotton region of Texas. The machinery is comparatively new and is in first-class condition. Railroad side track runs to the doors. Any one desiring to invest in this class of property should address—

Jas. H. Simpson Bank, Columbus, Texas.



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Incorporated 1884.
The Thomas Bradford Co.,
Successors to
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Manufacturers of the celebrated
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at Cincinnati Industrial Exposition,
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The Thomas Bradford Co., 174,
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From 2 to 10 Horse Power; Boiler wrought iron.



From 6 to 25 H. P.



Best CORN MILL in the World for plantation and farm purposes.



See how Engines from 6 to 100 Horse Power Portables from 6 to 25 H. P.

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Springfield, Ohio.

For Sale

1 50 Horse-Power Engine and Boiler, with Fittings.
3 Spoke Lathes—(made by Gleason, Philadelphia.)
About 40 Pulleys.

80 feet Shafting and Couplings for same.
Saw Arbors, Boxes, a Facer, Tenoner and Throating Machine for the manufacture of Spokes.

1 (new) 25 horse-power engine, boiler and pump; never been used.

A bargain to any one wishing to buy either as a speculation or for use.

Address E. T. ROBARDS, Sec'y,
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Trade: Send for cuts: Gratis.
Send for circulars: Gratis.
Send to cents for Book of Rules.

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A 40-Page Semi-Monthly Journal Devoted to the Saw Mill, Lumber and Wood-Working Interests.
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The Bay Line comprises the New and Elegant Steamers "VIRGINIA," "CAROLINA" and "FLORIDA."

All the Comforts and Luxuries of a First-Class Hotel are afforded the Traveler. Spacious and Elegant Saloons and Staterooms, furnished with an especial view to comfort. Unsurpassed Cuisine, which is made a specialty with this line. Elegant service and courteous attention. Steamers leave Baltimore daily except Sundays at 9 P. M.

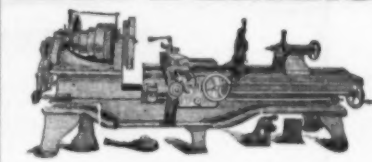
At Old Point Comfort is located the SPLENDID HYGELA HOTEL, a Delightful Resort at all Seasons of the Year. For Tickets and Information, apply at Company's office,

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Or on Board of Steamers.
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Church and School Bells
SIZES AND PRICES.
Diam. Wt. with Cost of
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No. 6, 25 in., 230 lbs., \$25
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WORKS AND OFFICE,
Cor. N. 15th St. & Penna. Ave., Philadelphia.
Manufacturers of Patent Extension
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Iron Planers, Boring Mills, Drills,
and a variety of other MACHINISTS' TOOLS.

Patent Double Chain Screw Pulley Blocks, unrivalled for durability, safety and power.
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Bates' Hand Elevators.
Patented April 18, 1871. Reissued July 25, 1876.
OVER 6,000 IN USE.

Adapted for Warehouses, Stores, Factories, Hotels, Public Institutions, and every place where merchandise, &c., is transferred from one story to another.

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HAS NOW BEEN
Under its present successful management for the past seven years,

And during that time its business has more than trebled, while its facilities have proportionately increased.

No expense is considered too great in obtaining and applying to the conduct of the business all possible improvements. With its present system for obtaining and promulgating information, this Agency is justly regarded by its patrons as authority on all matters affecting commercial credit. Its ramifications are greater and its business larger than any similar organization in the world conducted in one interest and under one management.

You are respectfully invited to investigate, and if in need of an Agency, to test its ability to serve you.

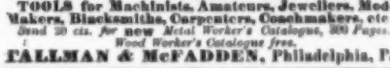
CHAS. F. CLARK, President.

Baltimore Office,—American Building,

H. KERSHAW, Supt



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Tools & Supplies
for all classes
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TOOLS for Machinists, Amateurs, Jewellers, Model Makers, Blacksmiths, Carpenters, Coachmakers, etc.
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WRITING MACHINE DROP CABINET.

This Desk combines two things in one: When closed it is an ordinary Flat-Top Desk covering and protecting the Machine, and when open is a complete Writing Machine Desk. Send for Circular.

Address W. H. TRAVIS, Manufacturer, 1003 Chestnut St., Philadelphia,

OR ANY WRITING MACHINE AGENT.

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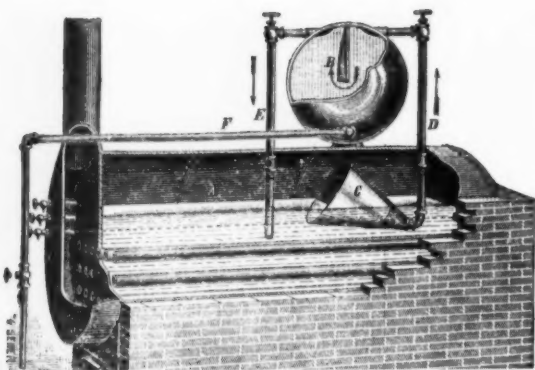
THE HOTCHKISS MECHANICAL BOILER CLEANER

Removes from Steam Boilers, Lime, Oil, Magnesia, and all other impurities of Boiler Water, and prevents Scaling, Foaming and Burning; but the object of this advertisement is to inform you that some

IMPOSTORS

in the South and West are offering Boiler Cleaners for sale as shown in cut on right-hand side below which is an old style of my cleaner. The cut on left side shows my improved style.

STEAM

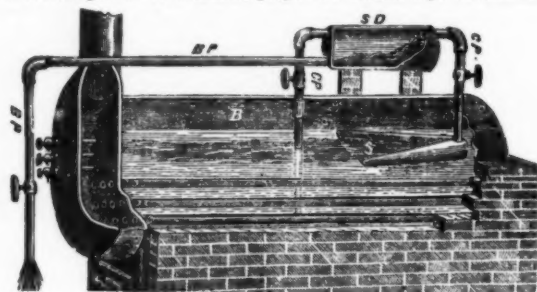


"HOW TO KEEP BOILERS CLEAN."

If you will send me your name I will send you an 88 page book, free of charge, giving useful information to Steam Users and Engineers. 65,000 already sent out and more to follow. The title of book is "HOW TO KEEP BOILERS CLEAN."

Compare this cut with one on left, and see if identical; the only difference being in shape of Skimmer and Drum.

S. D. Settling Drum. C. P. Circulating Pipe. B. P. Blow-off Pipe. S. Skimmer.



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FOR SALE IN THE SOUTH BY
F. BROTHERHOOD & Co., Charleston.
A. W. KEY & Co., Birmingham.
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TALBOT & SONS, Richmond.
J. & D. NOBLE, Anniston.
LEACH & SPANDOUR, Norfolk.

JAS. I. HOTCHKISS,
86 John Street,
NEW YORK.

SCALE

TO STEAM USERS.

I will Remove and Prevent Scale in any Steam Boiler, or make no charge. My Remedy will also Neutralize the most destructive waters, and prevent
GROOVING, FITTING, AND WASTING OF IRON,
Which causes so many Boiler Explosions. **Send-A book on "Care and Management of Steam Boilers."**
Address **GEO. W. LORD, 316 Union Street, PHILADELPHIA, PA.**

STEAM

PUMPS

SEND FOR

PRICES.

VALLEY MACHINE CO. EASTHAMPTON, MASS.

Phosphate Mining Notes.

BEAUFORT, S. C., August 10, 1885.

Editor Manufacturers' Record:

The Hume Bros. & Co., (limited), of Beaufort, S. C., are extending their storage capacity by the addition of a warehouse 80 x 125 feet, which will be completed in about a month.

It is rumored that the Sea Island Chemical Co. contemplates the erection of additional machinery, as they have just launched a new dredge, and are placing the machinery on board.

Hammond, Hull & Co. have made extensive alterations in their factory.

Some New York capitalists and W. Bischoff, of Charleston, are prospecting in this section with an idea of locating dry sheds, &c., for shipping rock.

The dredge of the "Phosphate Company," (limited), has been doing good work, although I am unable to say what quantity has been produced. She seems to meet the full expectations of the builders.

A Booming Town.

CAPE CHARLES, VA., Aug. 7, 1885.

Editor Manufacturers' Record:

The New York, Philadelphia & Norfolk Railroad Company have made rapid advancement in the construction of their buildings, shops and general works, including the newly-made harbor that will accommodate a large amount of shipping or space for a hundred or more vessels, besides the vast anchorage just outside of dock entrance. They will not construct packing or canning houses, but the same is being done by Wm. L. Scott on his property, south side of harbor, and designed expressly for this purpose, together with lumber and wood yards. Several packing houses already engaged or contracted for, and as many as are demanded, will be put up at short notice. The place for energetic and live men to come.

F. W. McDANIEL.

MR. GEO. R. CATHER, formerly of Baltimore, now the editor of the *Aegis*, Ashville, Ala., who is well known to our readers through his recent letters in the *MANUFACTURERS' RECORD*, now has in press and shortly to be issued by Messrs. T. B. Peterson & Bro., of Philadelphia, a novel that promises to attract more than usual attention in literary circles. Critics who have read the advance sheets are very hearty in praise of this new work; one of them writes: "It is a very exciting, absorbing, American novel, especially noteworthy for its thrilling interest throughout. It is also in the highest degree original and peculiar, while marked power characterizes every page. The plot is framed with unusual deftness and is developed with a vivid dramatic effect unsurpassed in modern fiction."

List of Patents.

The following Patents were granted to citizens of the Southern States, bearing date Aug. 4, 1885. Reported expressly for this paper by Louis Bagger & Co., Mechanical Experts and Solicitors of Patents, Washington, D. C.

Aitcheson, Peter & R. P., Alexandria, Va.
Box for bottled liquids.....323,486
Ayer, Alfred, Lake Weir, Fla. Device for handling boxes.....323,844
Cochran, R. F., Chiversville, Ga. Cotton-chopper.....323,497
Cowden, W. F., Cumberland, Md. Canal convey.....323,639
Daniell, J. S., Conyers, Ga. Cotton-planter.....323,642
Dooley, M. H., Atlanta, Ga. and J. D. O'Callahan, Chattanooga, Tenn. Car-axle box.....323,645
Eisner, Joseph, Baltimore, Md. Pantaloon drawers, or overalls.....323,569
Estelle, Henry, Chattanooga, Tenn. Boiler-cleaner.....323,571
Evans, G. W., Baltimore, Md. Milk or cream can.....323,864
Evans, G. F., Corpus Christi, Texas. Fastening for blind-slats.....323,863
Fennerty, J. M., Memphis, Tenn. Car-window.....323,408
Gathright, J. B., Louisville, Ky. Automatic Car-brake.....323,659

Gibson, W. B., Smithville, Ga. Seed-planter.....323,413
Howe, C. P., Austin, Texas. Gate.....323,664
Hunt, R. R., Lexington, Ky. Car-coupling.....323,812
Hutches, B. F., Jr., Galveston, Texas. Nuttie-fastener.....323,670
Kavanaugh, F., Harrisburg, Texas. Metallic compound.....323,486
Leeser, L. A., Baltimore, Md. Trunk.....323,434
Main, Harrison, Eureka Springs, Ark. Movement cure apparatus.....323,701
Martin, J. T., Roanoke, Texas. Cotton-picker.....323,708
Meyer, John, Covington, Ky. Beer-cooler.....323,712
Morton, J. W., Orange C. H., Va. Nut-lock.....323,715
Palmer, W. W., Montague, Texas. Cloth-rack.....323,522
Randall, L. L., Hawkinsville, Ga. Water-wheel.....323,734
Schmackers, Anton, Birmingham, Ala. Sash-fastener.....323,741
Snead, C. S. & U., Louisville, Ky. Locking device for jails.....323,748
Stitzel, Frederick, Louisville, Ky. Compressor for ice-machines.....323,749
Stitzel, Frederick, Louisville, Ky. Stuffing-box.....323,750
Swindell, Edw., Apalachicola, Fla. Construction of ships, 2 patents.....323,831
Walker, C. I. & F. J. Jervey, Charleston, S. C. Press for plastic material for building-blocks.....323,757
Ward, Thomas, Harper's, N. C. Plow.....323,836
Wylly, W. P., Patterson, Ga. Guide-rail clamp.....323,895

THE Jolife Awning Co. has been organized in Baltimore, with W. H. Jolife, president, E. Shriver Reese, treasurer, and J. C. Vincent, secretary, to manufacture patented window awnings. The Jolife awning possesses many very superior advantages over the window awnings now in use, as an examination will readily show. It can, however, be manufactured more cheaply than the old awnings, notwithstanding its many advantages over them. The office of the company is southeast corner Calvert and Fayette streets.

THE Rand Drill Co., of New York, have lately received the following very complimentary letter:

OFFICE OF THE LAKE SUPERIOR IRON CO.,

ISHPEMING, L. S., MICH., July 17, 1885.

RAND DRILL CO., 23 Park Place, N. Y.:

Gentlemen—We have just had occasion to renew a portion of the foundation placed under the 16x30-inch "Rand Compressor" purchased of your company in the winter of 1878-9. While this work was being done, I instructed our chief engineer to overhaul the machinery and make all needed repairs. To our surprise, the steam engine, in all its parts, was found to be in perfect order, and beyond setting out the piston-head rings, no further excuse for spending money could be found. The brass air cylinder showed but slight wear; as this cylinder had never been counter-bored at the ends, we thought best to do it while we had the engine down. Beyond this, and a slight change in the introduction of water to the cylinder heads, not a dollar's worth of work has been expended on the machine during its six and a half years of constant use. Thinking that these facts may be some interest to you, I take pleasure in sending them.

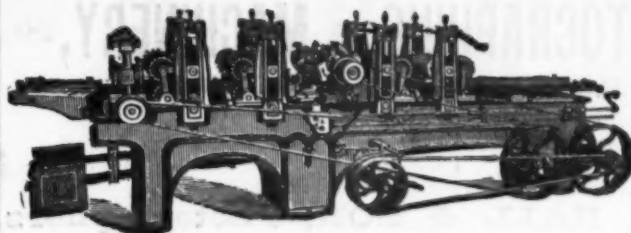
C. H. HALL, Agent.

The Rand Drill Co. have also received official notice from the New Orleans Exposition that they have been awarded medal of first class—gold—for best reciprocating rock drill; also medal of first class—gold—for best duplex air compressor.

Important.

Passengers arriving in the city of New York via Grand Central Depot, save \$3 carriage hire and transfer of baggage, by stopping at the Grand Union Hotel, opposite said depot. Passengers arriving by West Shore Rail Road, via Weehawken Ferry, by taking the 42d street horse cars at Ferry entrance, reach Grand Union Hotel in ten minutes for 5 cents, and save \$3 carriage hire. 600 elegant rooms, \$1 and upwards per day. European plan. Elevators, restaurant, cafe, lunch and wine rooms supplied with the best. Prices moderate. Families can live better for less money at the Grand Union than at any other strictly first-class hotel in the city. Guests' baggage delivered to and from Grand Central Depot, free. †

Wood-Working Machinery



FOR
Railroad Shops,
Planing Mills,
Car Builders,
Cabinet, Carriage,
Sash, Door
Blind Makers.

We received eight First-Class GOLD MEDALS at the World's Exposition, at New Orleans, La., on our Machinery, awarded by an Experienced and Practical Committee.

GOLD MEDAL for best Fast-Feed Flooring Machine.

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GOLD MEDAL for best Endless Bed Double Surfer.

GOLD MEDAL for best Jointing Machine.

GOLD MEDAL for best Circular Saw Machine.

GOLD MEDAL for best Planing Machine for Matching two Boards at a Time.

GOLD MEDAL for best Panel Planer.

GOLD MEDAL for best Shop Surfer. Illustrated Catalogues on Application.

S. A. WOODS MACHINE CO.

WAREHOUSES:

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New York. Boston. Chicago.

CHANDLER & TAYLOR, Phoenix Machine Works,

Manufacturers of

INDIANAPOLIS, IND.

SIDE CUTTING

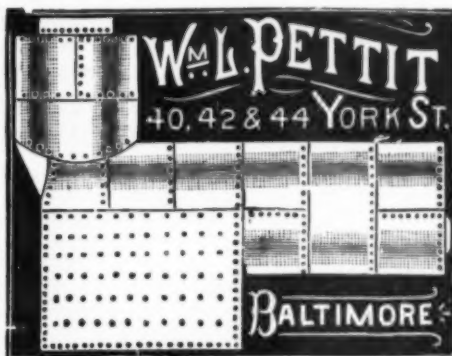
MULAY SAW MILL.

Send for Circular and Prices.



Send for Circular and Prices.

This is a valuable general purpose SAW MILL, being well adapted to class-sawing among lumbermen, but is most generally used for neighborhood work. When the power is very light it will still do proportionate work.



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MANUFACTURERS OF

HIGH AND LOW PRESSURE

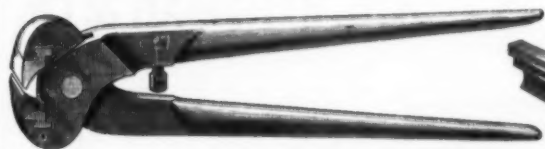
Steam Boilers,

Tank and Sheet Iron Work.

Estimates furnished for New Work and Repairs.

I make a specialty of SCOTCH BOILERS, the most economical in fuel, requiring very little repairs.

CAREW'S PATENT WIRE CUTTER.



These goods have recently been greatly improved. They are now made throughout of

FORGED STEEL

The advantage of this cutter is seen at a glance. The adjustable jaws are its main feature. These are made of the best tool steel, and are brought to a keen cutting edge before being tempered. The cutting quality is unsurpassed. Whenever they become dulled by use, they can easily be removed, by driving from the end showing price-mark, ground, and as easily replaced. This may be repeated as often as expedient; or they can be replaced by duplicate jaws, thus obviating the necessity of purchasing new cutters. Five sizes 6, 8, 10, 12 and 14 inch. If your merchant does not keep them, address

M. W. ROBINSON. Sole Agent, 79 Chambers St., N. Y.

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SIDING, CEILING,
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CINCINNATI, O.

SEND FOR ILLUSTRATED CATALOGUE.

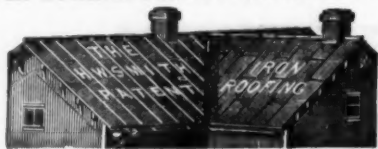
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—MANUFACTURERS OF—

IRON ROOFING, SIDING AND CEILING,

(The H. W. Smith Patent is the Best in use.)

PLAIN,
Corrugated,
CRIMPED,
BEADED.AND JOBBERS IN
IRON ORE,
PAINT,
CEMENT,
And Roofers' and
Builders' Papers.

—PATENT CALAMINED IRON IN QUANTITIES—A New Thing.—

Coating is indestructible, will not scale, is soft, solders more strongly and is superior to Galvanized Iron or Tin for all purposes. Protected both in body and surface. Circulars, Price-List and Sample mailed at request.

—CANTON, OHIO.—

METALLIC SHINGLES.
IRON ROOFING AND SIDING

—Crimped and Corrugated—

W. G. HYNDMAN & Co.52 & 54 East Second Street,
CINCINNATI, O.

—FOR—

DWELLINGS, STORES,
SAW MILLS, BARNs,
FACTORIES, SHEDS,
Etc., Etc., Etc.Send for Circulars and Prices.
Mention this paper.

IMPROVED HOISTING ENGINES,
MANUFACTURED BY THE
LIDGERWOOD MFG. CO.,
Office and Salesrooms: 96 Liberty St., New York.
MORTON, REED & CO., Agents,
59 and 61 German St., Baltimore.

Specially adapted for Railroad and Contractors' uses, Pile-driving, Bridge and Dock Building, Excavating, etc. Single or double cylinders, with single or double improved friction drums, with or without Boilers.

ONLY ASPHALT PAINT AND VARNISH WORKS IN THE UNITED STATES.

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will prolong the life of your iron chimneys, large or small. It bakes on and will not scale off like coal-tar products.

ASPHALTUM BLACK VARNISHES.

A full line for Manufacturers, the Trade and Family use. Address, (mentioning this paper.)

LOUISVILLE ASPHALT VARNISH CO.,

19 and 20 Courier Journal Building, - - - LOUISVILLE, KY.

ANNISTON MACHINERY COMPANY,

—MANUFACTURERS' AGENTS FOR—

Engines, Boilers, Machinery and Supplies
OF ALL KINDS,

—KORTING'S DOUBLE TUBE INJECTOR,—

P. O. Box 37.

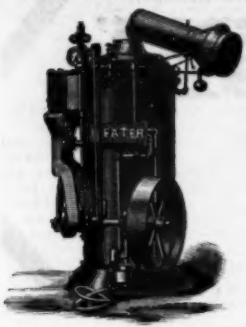
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CORRESPONDENCE SOLICITED FROM MANUFACTURERS WHO DESIRE AN AGENCY.

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MANUFACTURERS OF
**PATENT TERRAPIN
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from 15 to 200 Horse Power.
**BOILERS AND
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Send for illustrated Catalogue
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COVINGTON, KY., Manufacturers of
WIRE GOODS OF ALL KINDS,
Wrought-iron Fencing, Cresting and Hardware Specialties.
Send for Illustrated Catalogue and Price List.

PORTABLE FORGESEmpire Portable Forge Co.
Cohoes, N. Y.
Send for Catalogue.



ARMSTRONG BROS.

Vertical Engines

MANUFACTURERS AND BUILDERS OF

Of from 6 to 10 Horse-Power, and
STATIONARY ENGINES

Of from 10 up to 100 Horse-Power; also **STEAM BOILERS** of all sizes of either Steel or Iron. Send for Catalogue and Price-List.

ARMSTRONG BROS., Springfield, Ohio.

HENLEY'S CHALLENGE ROLLER SKATE.

THE LATEST AND BEST
And Most Complete Scientific

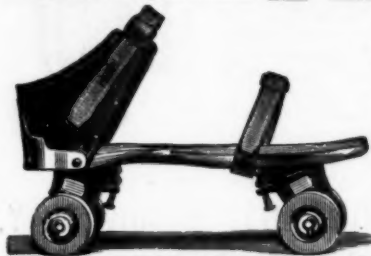
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HENLEY'S IMPROVED CHALLENGE
RINK AND CLUB SKATES
LIBERAL TERMS TO THE TRADE.

For prices, circulars and further particulars, address:

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Send four-cent stamp for new forty-page Illustrated Catalogue.
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THE RICHMOND GLOBE ROLLER SKATE,

The Easiest Running, Most Durable, and Most Practical Skate in the Market.

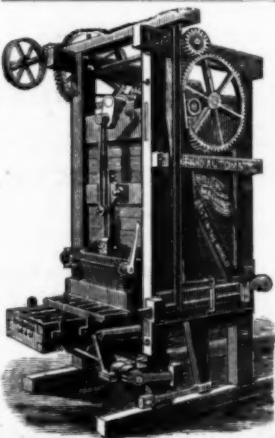


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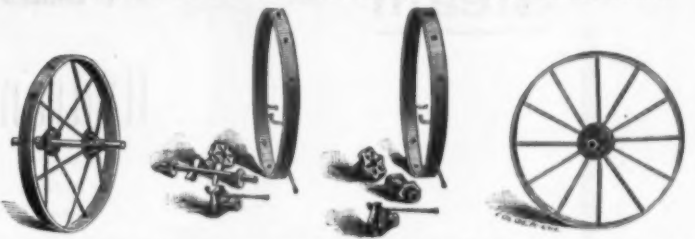
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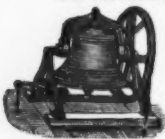
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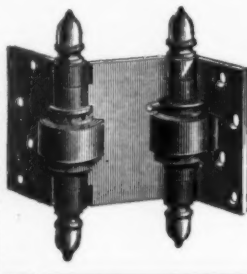
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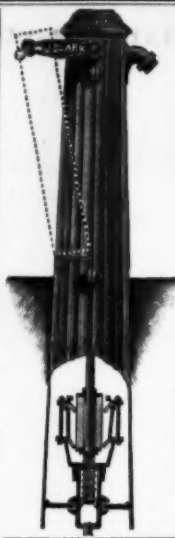
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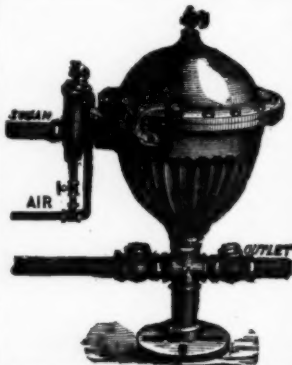
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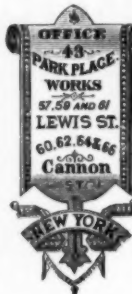
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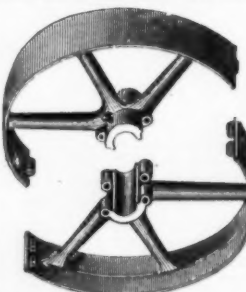
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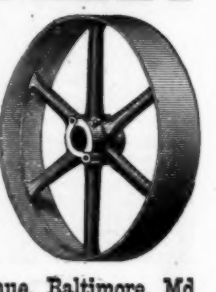
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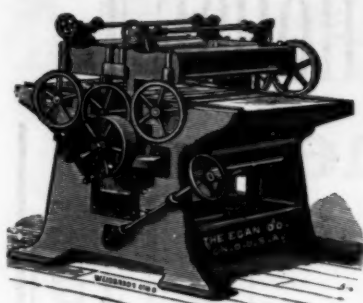
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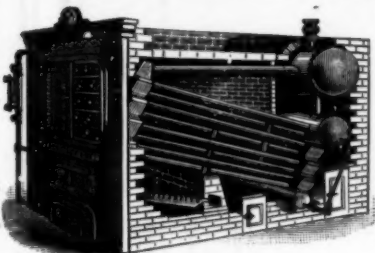
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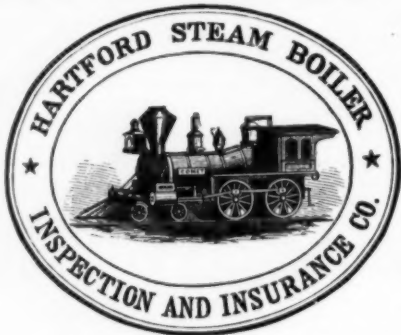
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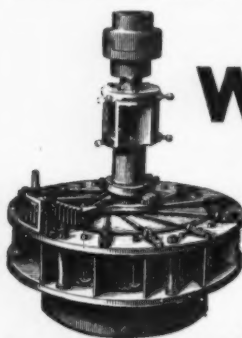
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Up to May 1st, 1885, TWENTY-ONE PER CENT. of our sales have been bona fide REPEATED ORDERS (2 to 12) from actual users (not agents) and do not include about twenty-five exchanged engines, all of which are counted as single sales. About half of the exchanges were from defective engines, the balance for increased power or automatic cut-off, the difference being paid in many cases. From 800 to 1,000 have displaced other engines. On the contrary, we know of but three parties, who, having bought one Westinghouse Engine, have failed to give us their subsequent orders. We have learned of but six second-hand engines being offered for sale, all of which were either from fire or failures. Nine engines (our earliest) were thrown back on our hands altogether. This is our record, with about 1,500 engines running.

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1881

1882

1883

1884

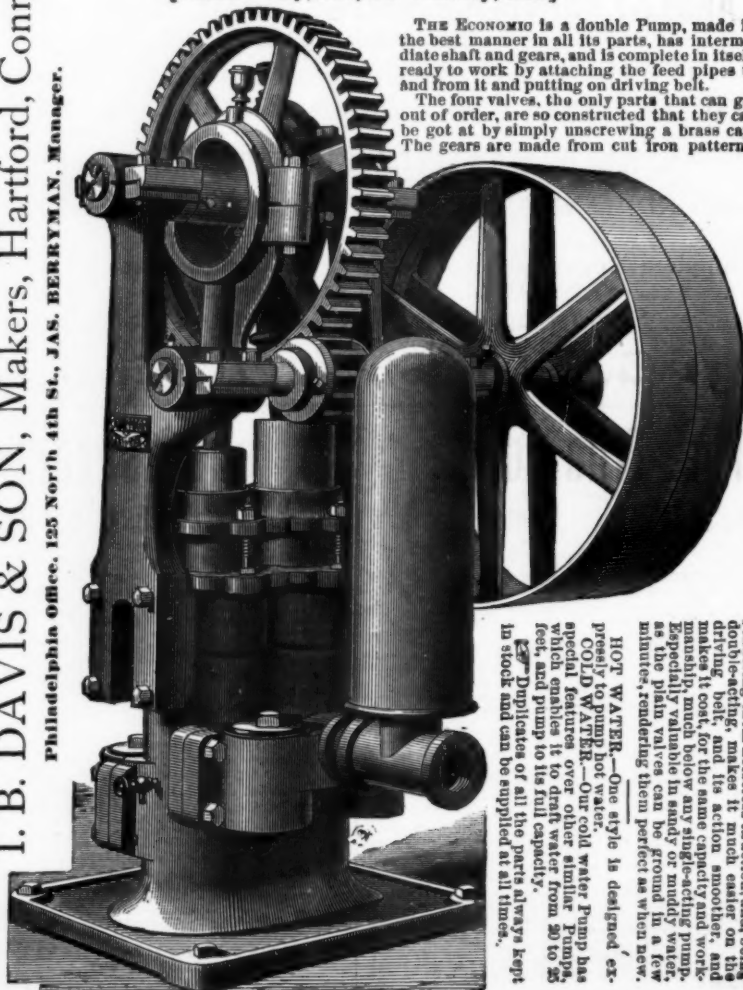
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Sales Department Conducted by

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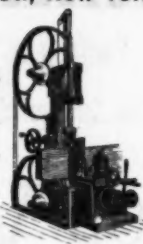
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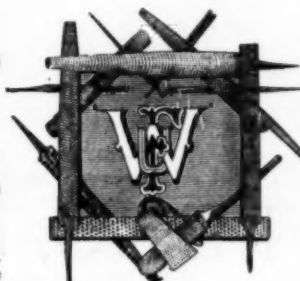
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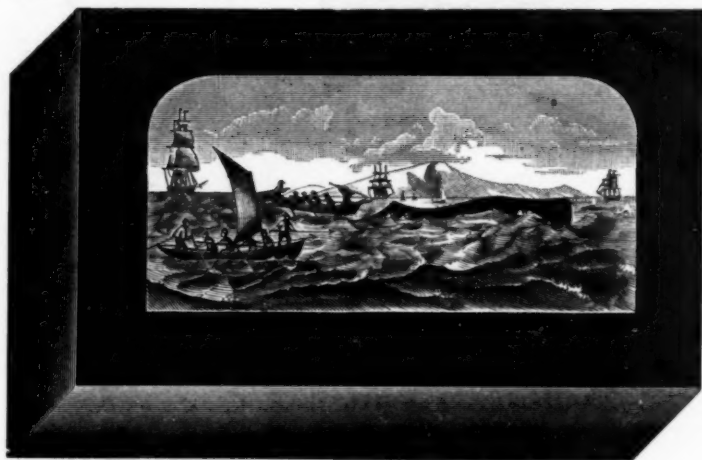
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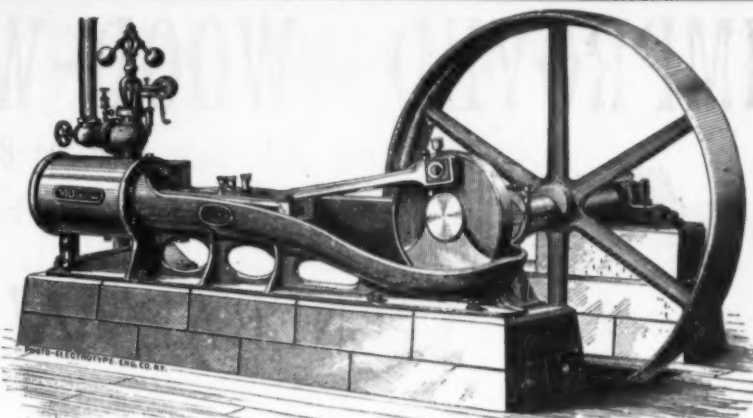
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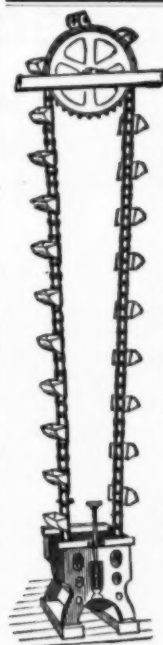
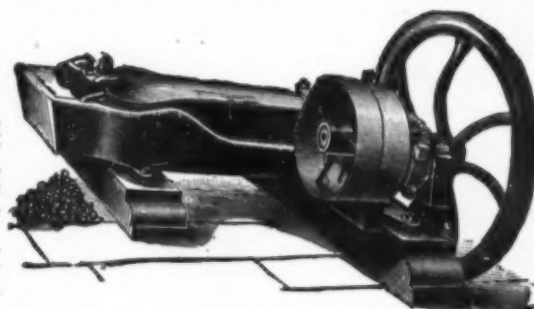
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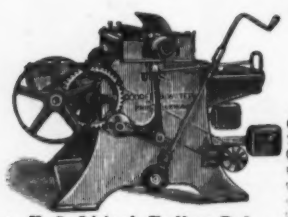
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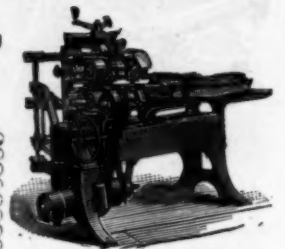
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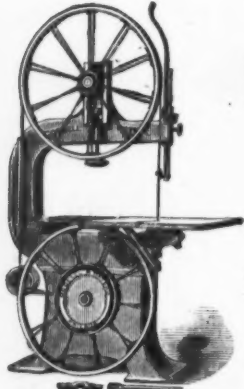


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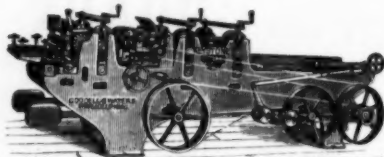
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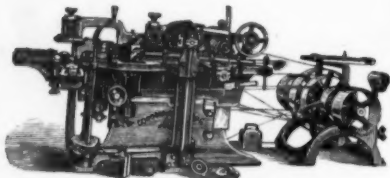


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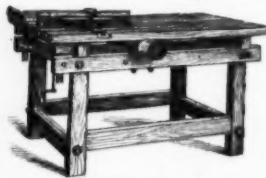
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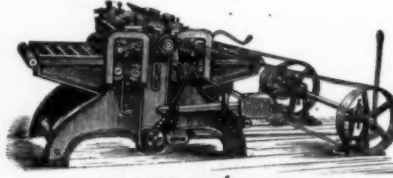
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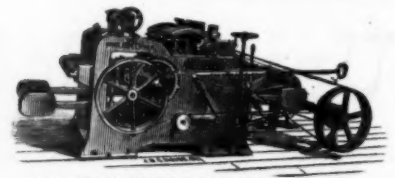
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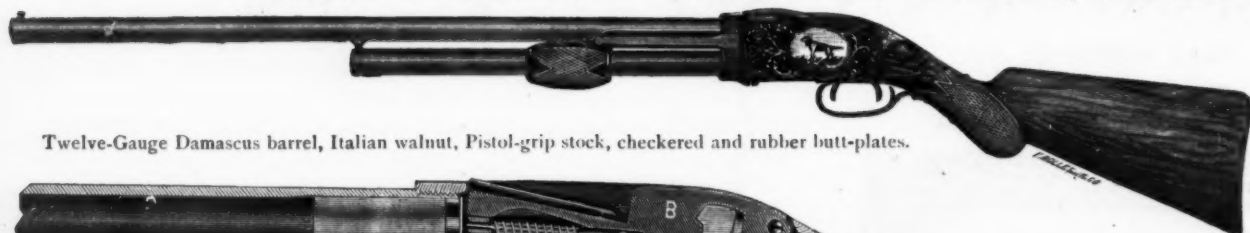
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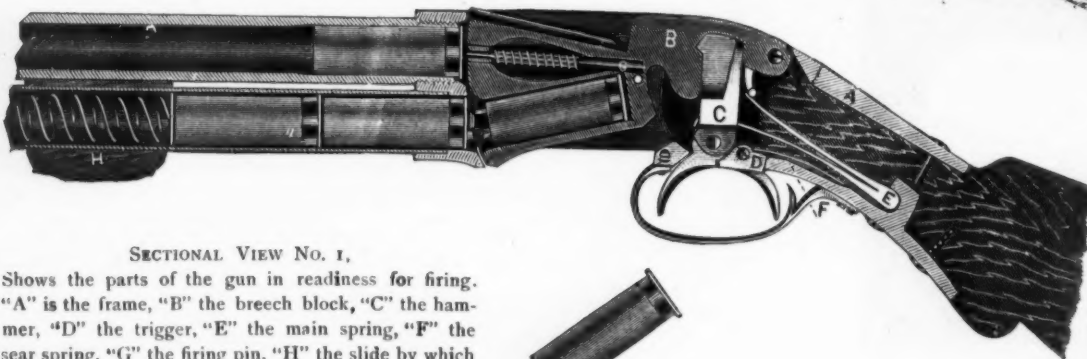
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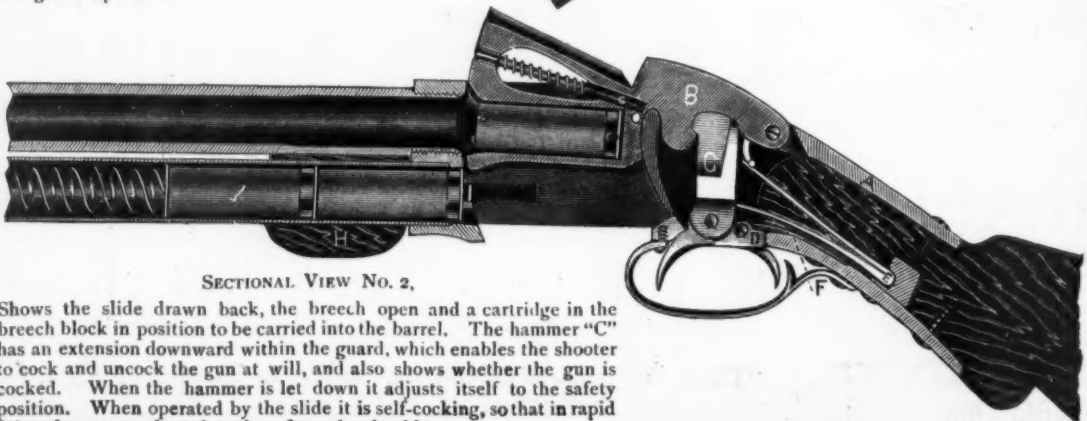


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SECTIONAL VIEW NO. 1.

Shows the parts of the gun in readiness for firing. "A" is the frame, "B" the breech block, "C" the hammer, "D" the trigger, "E" the main spring, "F" the sear spring, "G" the firing pin, "H" the slide by which the gun is operated.



SECTIONAL VIEW NO. 2.

Shows the slide drawn back, the breech open and a cartridge in the breech block in position to be carried into the barrel. The hammer "C" has an extension downward within the guard, which enables the shooter to cock and uncock the gun at will, and also shows whether the gun is cocked. When the hammer is let down it adjusts itself to the safety position. When operated by the slide it is self-cocking, so that in rapid firing the gun need not be taken from the shoulder.

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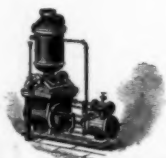
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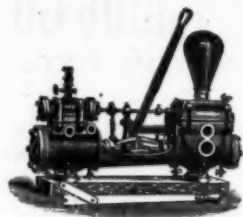
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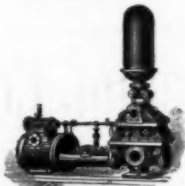
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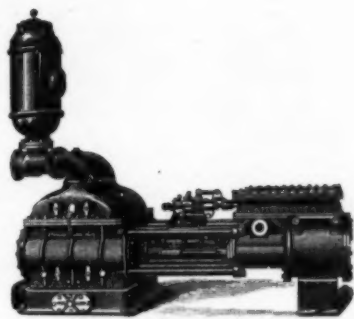


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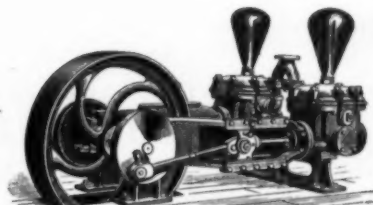


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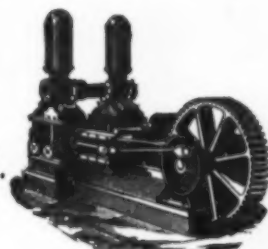


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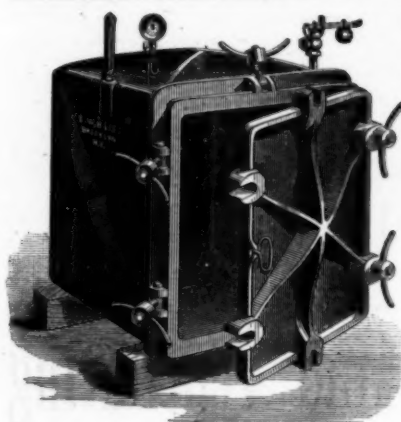
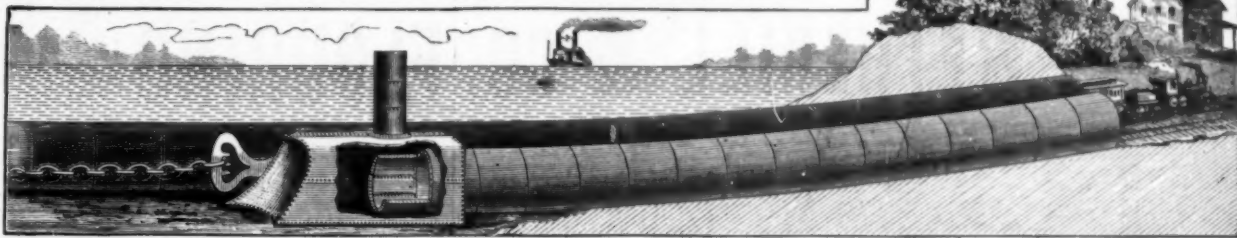


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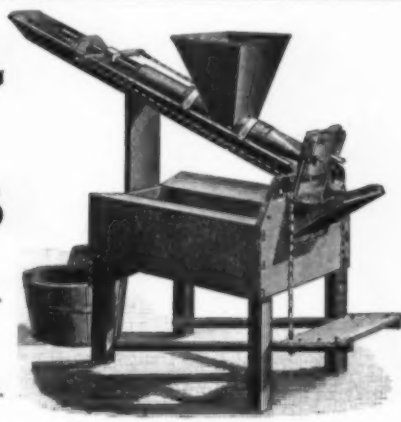
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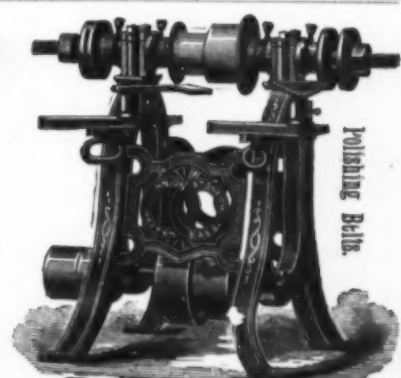
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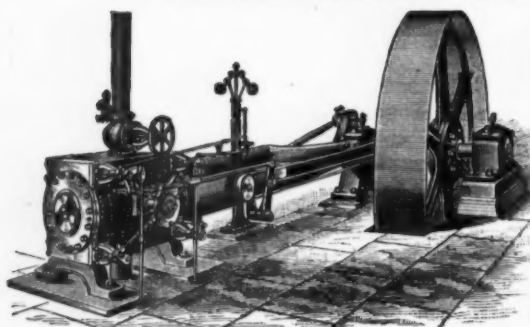
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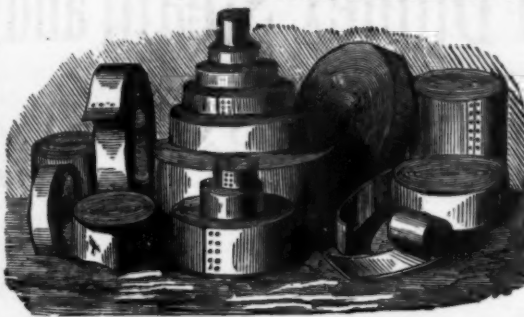
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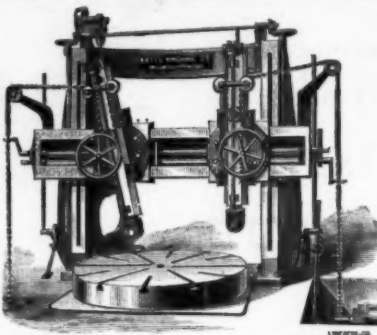
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